

Writing a Research Proposal (Engineering)

Aung Khaing Min (Dr.Eng.) Researcher

Disaster Mitigation Research Center, Nagoya University

29th August 2026





Aung Khaing Min

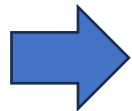
aung.khaing.min.y0@f.mail.nagoya-u.ac.jp

Education History

BE (Civil)	-Hmawbi Technological University (2006)
ME (Civil & Environmental)	-Nagoya University, Japan (2015)
Dr.Eng. (Civil & Environmental)	-Nagoya University, Japan (2021)

Work Experience

Assistant Director
(W/S)
Ministry of
Construction



Consultant
National Engineering
& Planning Services
(NEPS)



Team Leader
LCDP Scholarship
Myanmar Japan
Center



Researcher
Disaster Mitigation
Research Center,
Nagoya University

Content

➤ Introduction

- What is Research/Engineering Research?
- Finding Suitable Supervisor (Professor) and Research Theme

➤ **Research Proposal Preparation**

➤ Important Considerations for Research Proposal

- The Role of AI in Scientific Research
- Get the Right Recommendations
- LCDP Scholarship

What is research?

- Word 'Research' is comprises of two words = Re + Search.
- It means to search again.

သုတေသနဆိုသည်မှာ

- သက်ဆိုင်ရာဘာသာရပ်နယ်ပယ်အလိုက်မရှင်းလင်းသေးသည့်ပြဿနာများ၊အဖြေမပေါ်သေးသည့်ပုစ္ဆာများ၊များစွာမသိရှိသေးသည့်အကြောင်းအရာများကိုဖြေရှင်းအဖြေရှာပိုမိုသိရှိလာအောင်ပညာရပ်ဆိုင်ရာသဘောတရားနည်းနာများကိုအသုံးပြုပြီး စနစ်တကျစူးစမ်း လေ့လာရှာဖွေ ဖော်ထုတ်သည့်လုပ်ငန်းစဉ် ဖြစ်သည်။
- သုတေသနလုပ်ငန်းစဉ်၏ အဓိကသော့ချက်သည် ရှာဖွေခြင်းပင်ဖြစ်သည်။ စူးစမ်းရှာဖွေခြင်း၊ စေ့စပ်သေချာစွာရှာဖွေခြင်း၊ကြိုးစားပမ်းစားရှာဖွေခြင်းသည်သုတေသန၏အသက်ဖြစ်သည်။ကြိုးပမ်းရှာဖွေမှုအားကောင်းလေလေသုတေသနတန်ဖိုးမြင့်မားလေဖြစ်သည်။စူးစမ်းရှာဖွေမှုမပါရှိလျှင်သုတေသနဖြစ်မြောက်မည်မဟုတ်သကဲ့သို့စူးစမ်းရှာဖွေမှုတစ်စုံတစ်ရာမရှိဘဲသုတေသနလုပ်ငန်းစဉ်ကိုအကောင်အထည်ဖော်ဆောင်ရွက်နိုင်မည် မဟုတ်ပေ။

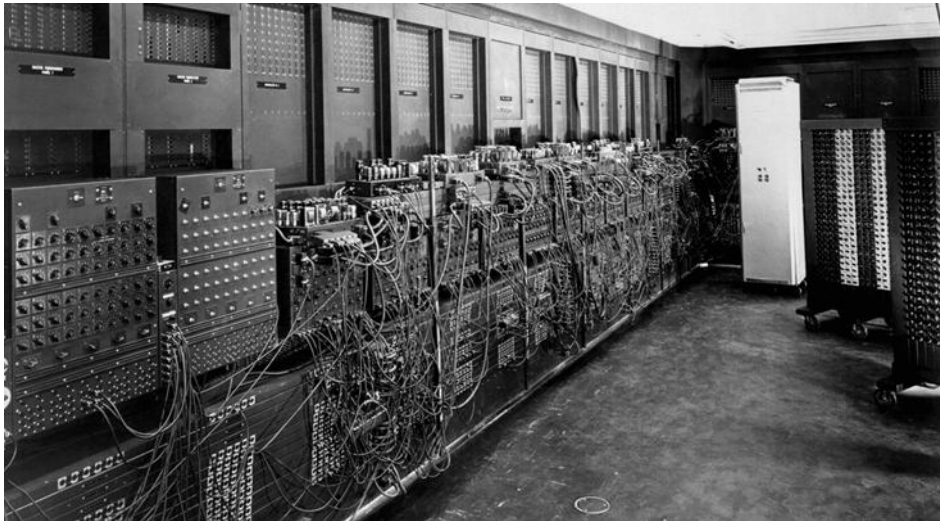
Introduction and Basic Concepts of Engineering Research

Purpose of Engineering Research:

- Establish, sustain, advance, and promote innovative knowledge
- Probe into the unknown by seeking solutions to research problems
- Apply scientific principles for the benefit of humanity



Steam Train 24km/h



the World's First Computer



Japanese Maglev: World's **fastest** bullet train hits **603 km/h**, travel will be faster than planes!

What is (Academic) “research”?

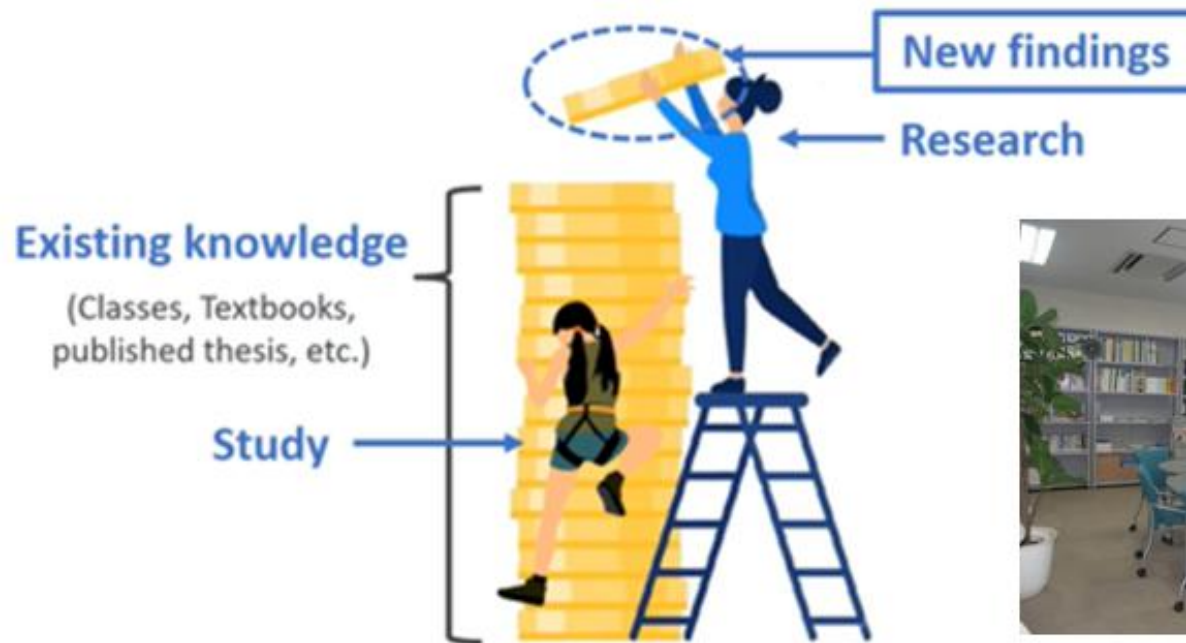
✓ Study ≠ Research

Study	• To learn existing knowledge (=Previous studies)
Research	• To find something new and add it to the existing knowledge



What is (Academic) “research”?

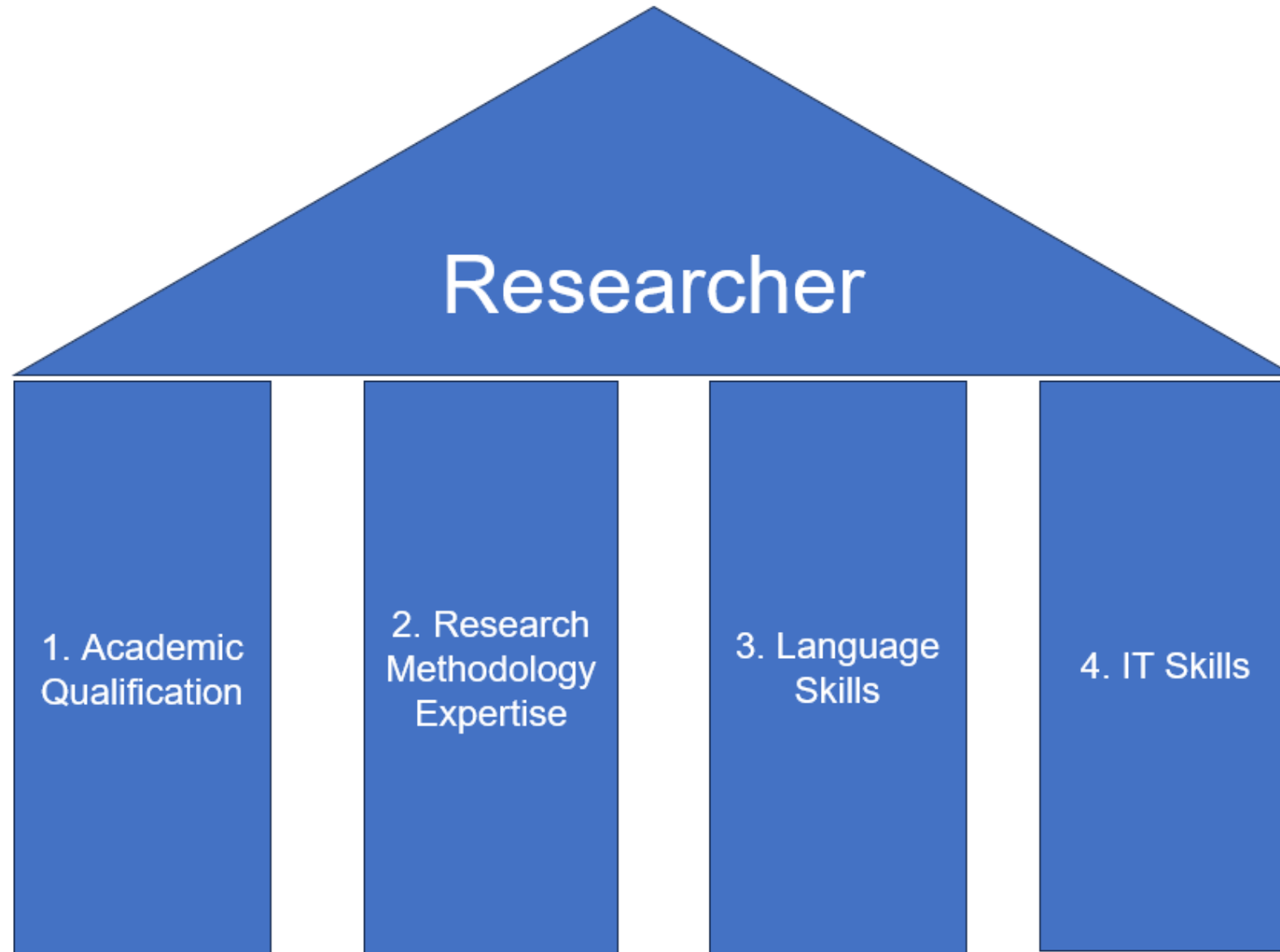
- ✓ **Graduate school** = A place for conducting research
- ✓ The research must be **proactively conducted by the student themselves**
(seeking guidance from their academic advisor when necessary)
- ✓ To enter the grad school = **To conduct your own research**



What is (Academic) “research”?

- ✓ **Research = To add something new (novelty) to the academic field**
Ex.) By applying a different methods, variables, target, or adding new interpretation...
- ✓ **Previous studies (How do you show your research new?)**
What is already known? and what is not yet known? (about your research theme)
→ **Reviewing previous studies is essential**
- ✓ **A good research plan can be made...**
 - Based on the recognition that the grad students (You) initiate the research,
 - **Previous studies are well reviewed,**
 - Based on the previous studies, **something new is presented**

Qualities of a Good Researcher



Types of Research Proposals

- **Thesis Proposal** (Master's level)

- Answers a research question based on **existing knowledge**
- Demonstrates **critical thinking** and **analytical skills**

- **Dissertation Proposal** (Ph.D. level)

- Aims to make a **significant new contribution** to knowledge
- Provides a **novel solution** to a contextual problem

- **Funding Proposal**

- Written for **grant applications** (e.g., research institutes)
- Competes for funding to **support research work**



Audience

(1) RP for the university

- ✓ **Research topic (theme) & Assignment of academic advisor**

If no suitable professor for your research...

- No meaning for you to go to that school
- No meaning for the school to select you

- ✓ **Applicant's enthusiasm and ability**

- How much you have studied your proposed theme
- Logical thinking, writing skill, etc.

- ✓ **Novelty and originality**

- Something new based on previous studies



Important

Find a suitable professor(s)
for your research in advance



Professor's Evaluation Criteria

The professor will look at a research proposal will ask:

- Does the proposal advance the **state of the art**?
- Does it introduce **innovative approaches**?
- Does it show a **good understanding of the major work**?
- Does it identify **the gaps of existing knowledge**, and so on?

How to fill a Research Gap



Finding Supervisor (Professors)

Long Term Capacity Development Program For Myanmar Private Sector (LCDP)

D. Engineering/ Information Technology (IT)

Field of Study	Accepting Universities	Graduate Schools	(Tentative) Date of University Application	Remark
Engineering/ Information Technology (IT)	University of Miyazaki	Graduate School of Engineering - Civil and Environmental Engineering Program - Electrical and Electronics Engineering Program - Mechanical Engineering Program - Information and Communication Technology Program https://www.miyazaki-u.ac.jp/tech/english/index_en.html	TBD (by the middle of May,2025)	English Certificate is necessary before the University Entrance Exam. TOFEL ibt/ IELTS/ TOEIC are acceptable.
	Kumamoto University	Graduate School of Science and Technology - Dep. Of Science - Dep. Of Civil and Environmental engineering and Engineering and Architecture - Dep. Of Computer Science and Electrical Engineering https://www.fast.kumamoto-u.ac.jp/gsst-en/	TBD (April 5 to May 17, 2025)	English Certificate is necessary before the University Entrance Exam. TOFEL ibt/ IELTS/ TOEIC are acceptable.
	Hiroshima University	Graduate School of Advanced Science - Mechanical Engineering Program - Transportation and Environmental Systems Program - Architecture Program - Informatics and Data Science Program https://www.hiroshima-u.ac.jp/en/adse	TBD (Around May ,2025)	English Certificate is necessary before the University Entrance Exam. TOFEL ibt/ IELTS/ TOEIC are acceptable. (Valid scores are limited to those taken up to two years prior.)
	Yokohama National University	Graduate School of Urban Innovation Specialization in Infrastructure and Urban Society. International Infrastructure course (IGSI) (Civil Engineering) https://www.urban.ynu.ac.jp/english/index.html https://www.youtube.com/watch?v=jrP1syWCE8w&t=51s https://www.urban.ynu.ac.jp/english/all-english-program/special-graduate-program/index.html	TBD (Around June ,2025)	None

Engineering/ Information Technology (IT)	OKAYAMA University	Graduate School Environmental, Life, Natural Science and Technology - Computer Science - Information and Communication Systems - Electrical and Electronic Engineering - Intelligent Mechanical Systems- - Advanced Mechanics - Urban Environment Development - Mathematical and Data Sciences - Applied Chemistry - Rural and Environmental Sciences https://www.elst.okayama-u.ac.jp/en/	TBD	English Certificate is necessary before matching. TOFEL ibt is acceptable.
	NAGOYA University	Graduate School of Engineering (Graduate School of Environmental Studies) Department of Civil and Environmental Engineering (Group of Sustainable Development) https://www.civil.nagoya-u.ac.jp/index.html	TBD (Around May ,2026)	English Certificate is necessary before matching. IELTS (Overall band score of 6.0), TOEFL (80 in iBT), Duolingo 110, CEFR C1
	Toyo University	Faculty of Global and Regional Studies Department of Regional Development Studies https://www.toyo.ac.jp/academics/ggrs/mrds/	TBD (Around April ,2026)	English Certificate is necessary before matching. TOFELib/IELTS /CEFR/DET(Duolingo English Test) are acceptable.
	Kobe Institute of computing	Graduate School of Information Technology ICT Innovator course https://www.kic.ac.jp/eng/	TBD (Around March 1 to April 15,2026)	NONE
	Ritsumeikan University	Graduate School of Information Science and Engineering Information Science and Engineering Course https://en.ritsumeik.ac.jp/gsis/	TBD	English Certificate is necessary before the matching. TOFEL ibt/ IELTS/ TOEIC/ DTE(Duolingo English Test) are acceptable.



[Prospective Students](#)

[Graduates](#)

[Current Students](#)

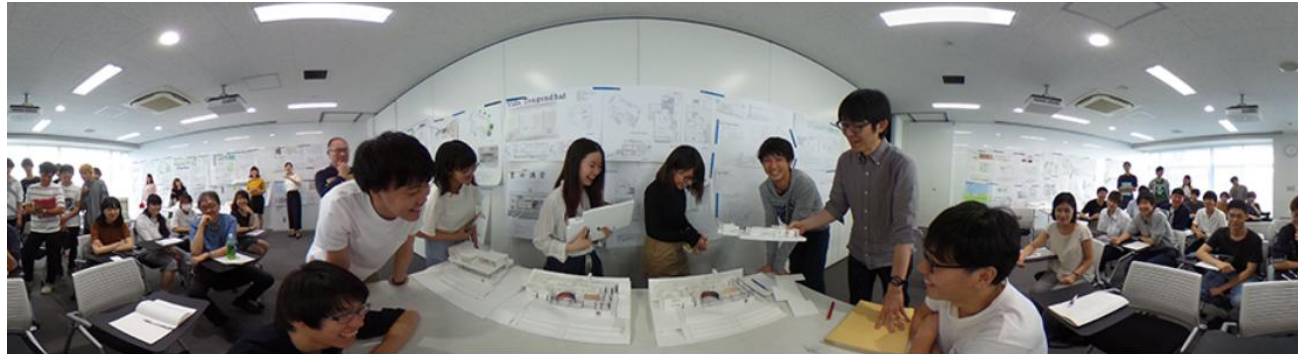
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[Departments](#)

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Department of Environmental Civil Engineering and Architecture



Presentation and critique of architectural design results

Learning Environment

Unlike other departments, the Department of Environmental Civil Engineering and Architecture splits into the Environmental Civil Engineering Program and the Architecture Program from the second year, and education and research are conducted in each program. The Environmental Civil Engineering Program is based on six fields: Structure and Materials, Hydraulic Engineering, Ground, Planning, Environment, and Land Design, while the Architecture Program is based on three fields: Planning and Design in Architecture and Urban Planning, Environment and Facilities, and Structure, Materials, and Production Technology. Education and research are conducted in a well-equipped environment with laboratory facilities and other facilities, with thorough guidance from faculty members in cooperation with each other.



大学院工学研究科
土木工学専攻
環境土木・建築学科
環境土木工学プログラム

[Introduction to this major and program](#)



[For prospective students](#)



[For current students](#)



[For companies and researchers](#)



Civil Engineering

—— 社会の「礎」をつくる ——

CIVIL and ENVIRONMENTAL ENGINEERING
at Graduate School/School of Engineering, NAGOYA UNIVERSITY



Faculty and Staff List

This is a list of faculty members of the Department of Civil Engineering. Faculty members related to the Department of Civil Engineering and Architecture's Environmental Civil Engineering Program (undergraduate) are also listed, including faculty members enrolled in the Graduate School of Environmental Studies.

[HOME](#)
[Introduction to the](#)

Structure/material system

professor

Kazuo Tateishi



Research Field

Steel structures,
 composite structures,
 maintenance
 engineering

Affiliation within the university

Graduate School of
 Engineering,
 Department of Civil
 Engineering

[laboratory](#)

professor

Hikaru Nakamura



Research Field

Concrete Structure,
 Structural
 Engineering,
 Earthquake
 Engineering

Affiliation within the university

Graduate School of
 Engineering,
 Department of Civil
 Engineering

[laboratory](#)

professor

Junji Kato



Research Field

Computational
 mechanics, Optimal
 design, Numerical
 simulation

Affiliation within the university

Graduate School of
 Engineering,
 Department of Civil
 Engineering

[laboratory](#)

Water engineering system

professor

Nobumi Mizutani >



Research Field

Coastal Engineering,
Ocean Engineering

Affiliation within the university

Graduate School of
Engineering,
Department of Civil
Engineering

> [laboratory](#)

professor

Yuji Toda >



Research Field

Hydraulics, River
Engineering,
Environmental
Hydraulics

Affiliation within the university

Graduate School of
Engineering,
Department of Civil
Engineering

> [laboratory](#)

Specially Appointed Professor

Takashi Tashiro >



Research Field

River hydraulics,
Applied ecological
engineering

Affiliation within the university

Disaster Mitigation
Collaborative
Research Center

> [laboratory](#)

Associate Professor

Tomoaki Nakamura >



Research Field

Coastal Engineering

Affiliation within the university

Graduate School of
Engineering,
Department of Civil
Engineering

> [laboratory](#)

Visiting Associate Professor

Tsubaki Ryota >



Research Field

Hydraulics, River
Engineering

Affiliation within the university

Graduate School of
Engineering,
Department of Civil
Engineering

> [laboratory](#)

Specially Appointed Lecturer

Zhao Yonghuan >



Research Field

Coastal Engineering

Affiliation within the university

Graduate School of
Engineering,
Department of Civil
Engineering

> [laboratory](#)

■ Hydraulic Engineering/ River Basin Management Laboratory

(Toda & Tsubaki Lab.)



We focus on river flow and environment, particularly researching on phenomena in the river channel and rain water movement process of the mountainous district that is a production field of water.

Hydraulic Engineering Laboratory

Depart. of Civil and Environmental Engineering, Nagoya University

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Welcome to our site(Toda and Mizoguchi Lab)!

If you have any questions about our laboratory, or want to come here,
plese contact below.

◇Contact

Adress:

Furo-cho, Chikusa-ku, Nagoya, Japan

Department of Civil engineering

E-mail:

Yuexia ZHOU (zhou[at]civil.nagoya-u.ac.jp)

**If you are interested in applying to our lab for a master's or doctoral program
Please contact the Professor Toda, or Lecturer Mizoguchi**

Yuji TODA (toda.yuji.v4[at]f.mail.nagoya-u.ac.jp)

Yuta Mizoguchi (mizoguchi.yuta.w3[at]f.mail.nagoya-u.ac.jp)

◇Current Research

[< Research Contents > 2023/04/07](#)

Hydraulic Engineering Laboratory

Dept. of Civil and Environmental Engineering, Nagoya University

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Japanese

Member

協力教員



名誉教授
Emeritus Professor

辻本 哲郎
[Tetsuro Tsujimoto](#)



特任教授
Designated
Professor
(※減災館所属)

田代 喬
[Takashi Tashiro](#)



招へい教員
Guest Professor
(神戸大学大学院
工学研究科市民工
学専攻 准教授)

椿 涼太
[Ryota Tsubaki](#)



研究員(工学博士)
Researcher
(Doctor of
Engineering)

Aung Khaing Min
(ミンさん)

Hydraulic Engineering Laboratory

Dept. of Civil and Environmental Engineering, Nagoya University

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Member



後期課程3年
D3

Karimullah Sefat
(セファットさん)



前期課程2年
M2

平井 花乃
Kano Hirai



前期課程2年
M2

西川 雄規
Yuki Nishikawa



前期課程2年
M2

山本 泰子
Yasuko Yamamoto



前期課程1年
M1

佐伯 翼
Tsubasa Saeki



前期課程1年
M1

川本 航大
Kodai Kawamoto



前期課程1年
M1

松木 真歩
Maho Matsuki

Hydraulic Engineering Course Student Laboratory

Hydraulic Engineering Laboratory

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[Research theme]

[River afforestation and river ecology](#) [Advanced and efficient river channel management](#)
[Levee breach process and risk assessment](#)
[Flood flow visualization Measurement](#) [Flood inundation analysis](#) [Overseas river basins](#)

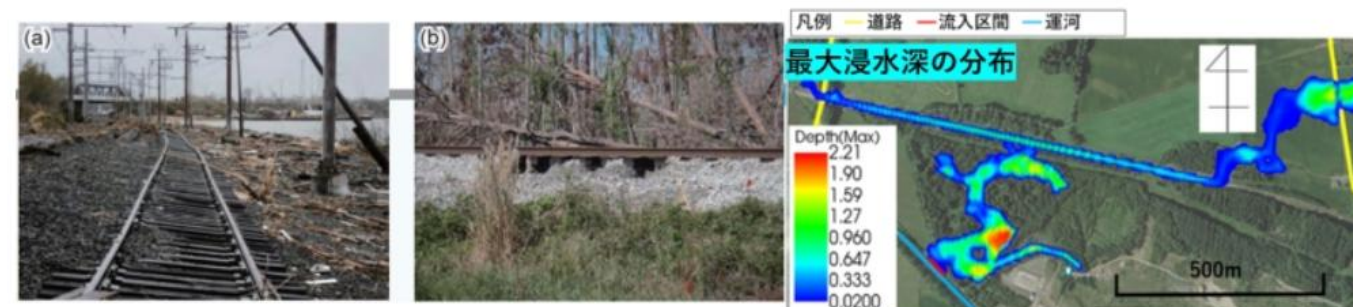
Development of a river channel vegetation dynamics and habitat evaluation model

🌳 After verifying the applicability of the river channel vegetation dynamics prediction model developed in actual rivers (Nagara River, Kumozu River, etc.), we will add a vegetation dynamics model and a habitat evaluation model to iRIC Nays2DH and perform a two-dimensional planar analysis of [flow/riverbed + vegetation + habitat evaluation].

🌳 We will develop a mid- to long-term vegetation dynamics/habitat evaluation model in the context of "future climate change" and develop mid- to long-term river management technology.

Flood inundation analysis (railway and bridge damage)

- Using flood analysis (i.e. Nays2DFlood) and geographical information analysis, we identify the conditions under which floodwaters will cause damage to structures such as railway and road embankments.
- By predicting damage in advance, we can develop cities and take measures to make them easily recoverable even if a major flood occurs.



被害が生じる条件を水理 実験とシミュレーションで特定

◇ 2023 (Reiwa 5) ◇

master's thesis

Kenta Sato	Two-dimensional flood flow simulation of river channel network system
Shinbo Taiki	A study on risk assessment of erosion damage considering uncertainty in prediction of braided channel changes
Yuuki Morita	Mid- to long-term analysis of in-river habitats based on coupled riverbed changes and vegetation changes
National Shoai	A study on rainfall damage risk assessment for railway lines based on geographic information
ZAR NI MAW	Evaluation of Flood Safety Zones in Kanyin Dam, Ayeyarwaddy Region, Myanmar
Tandin Wangchuk	Glacial Lake Outburst Flood (GLOF) Hazard Assessment in Phochhu River Basin, Bhutan

Graduation Thesis

Kazuki Yamada	Development of a method for evaluating dynamic environments of in-river habitats using aerial photo analysis and machine learning
Yoshiaki Muranaka	Evaluation of uncertainty in river discharge observations focusing on differences in flow trajectories due to float drop positions
Sakagami Nonohana	Study on activation of riverbed changes caused by small floods in gravel rivers
Aya Takahashi	Estimation of economic damage caused by flooding of the Shonai River and consideration of measures to reduce the damage

◇ 2020 (Reiwa 2) ◇

doctoral dissertation

AUNG KHAING MIN	Study on pluvial flood processes with sensing and modeling of old urban drainage systems in the cities of developed and developing countries
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master's thesis

Ian Jefferson VILLARIN	A case study on the impact of projected climate change on flood risk of Shonai River in Aichi Prefecture and the importance of climate adaptation strategies
Shi Zongyue	A case study on inundation analysis and economic loss assessment of the underground complex of Nagoya station
Yoshihiro Okamoto	Development of Vegetation Dynamics Model Accounting Above- and Below-ground Biomass Exchange and Its Application to Riparian Vegetation Management
Hiroto Tanioka	Technology for identifying areas at risk of riverbank scouring and erosion using image classification with machine learning

Graduation Thesis

Ryoma Hamaguchi	Study on changes in pressure fluctuation characteristics near the riverbed due to bed load
Maekawa Itsuki	Basic research on the effect of water temperature on environmental DNA loss - focusing on Zacco temminckii
Takeshi Kaoruhei	Study on identification of local weak spots for riverbank erosion and risk assessment of erosion damage using depth-averaged flow analysis
Kenta Yasuhiro	Research on disaster risk assessment method for levees and revetments using conditions for stable river channels

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Hydraulic Engineering Lecture Student Research Room

Hydraulic Engineering Laboratory

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List of lectures given by faculty members of this laboratory

graduate school		Faculty	
Lecture title	Course period	Lecture title	Course period
Watershed Conservation Seminar	1 year early and late 2 years early and late	Human activities and the environment	1 year later
Frontiers of Civil Engineering	1 year early	Flow Dynamics and Exercises	2 years early
Special Lecture on River and Watershed Management	1 year early	Waterway Hydrology	2 years later
Special Topics in Hydrosphere Mechanics	1 year early	Hydraulic Experiments	3 years early
Flow and terrain analysis seminar	1 year early	Hydrology and River Engineering	3 years later

Researcher Directory

Researcher details

- Basic Information

- ◆ Basic Information
- ◆ Bachelor of Science
- ◆ Research Keywords
- ◆ Research Field
- ◆ Current research topics and SDGs
- ◆ Biography
- ◆ Education
- ◆ Affiliated Academic Societies
- ◆ Committee Membership
- ◆ Awards

+ Research Activities



Yuji Toda

Yuji Toda

TODA, Yuji

Affiliation	Professor, Department of Civil Engineering, Graduate School of Engineering
Graduate School	Graduate School of Environmental Studies Graduate School of Engineering
Faculty Affairs	Department of Environmental Civil Engineering and Architecture, Faculty of Engineering
contact address	toda.yuji.v4@f.mail.nagoya-u.ac.jp

Bachelor of Science 2

1. Doctor of Engineering (June 2002, Tokyo Institute of Technology)
2. Bachelor of Engineering (March 1995, Tokyo Institute of Technology)

Hydrology Erosion control and river engineering Water resources and hydraulic engineering

1. Others / Others / Engineering @ Civil Engineering @ Hydraulic Engineering

1. Environmental conservation in the river basin

2. Material transport and biological primary production in rivers

1. **Water physics formula collection example collection** Peer-reviewed

Japan Society of Civil Engineers, Committee on Hydraulic Engineering, Subcommittee on Editing Hydraulic Formulas and Examples (Role: Contributing writer, Scope: Chapter 6: Watershed Environment (6.4))

Civil Engineering Society December 2024 (ISBN: ISBN978-4-8106-1091-8)

[▶ Learn more](#)

2. **Control of soil nutrient dynamics for environmental conservation and restoration**

Shunsuke Ikeda, Kazutoshi Suga, Mineo Okamoto, Yuji Toda, Kazutoshi Osawa, Yoshihisa Akamatsu, Sayuri Megumi, Akane Okubo (Part: Co-author)

Modern Science Society October 2014 (ISBN: 978-4-7649-0466-8)

[▶ Learn more](#)

3. **World River Dictionary**

Yutaka Takahashi (Editor-in-Chief) (role: co-author)

Maruzen Publishing, July 2013

[▶ Learn more](#)

4. **Simulation Dictionary**

Edited by Japan Society for Simulation Technology (Part: Co-author)

Corona Publishing, February 2012

[▶ Learn more](#)

5. **Supplement to Advances in Hydro-Science and Engineering**

T. Tsujimoto, and Y. Toda (Responsibility: Co-author)

NHRI March 2009

1. **Practical development of a method to assess the risk of levee erosion, scouring and breaching based on understanding the current state of the river channel – Examining the damage caused by the Chikuma River flood in October 2019 –** Peer-reviewed

Yuji Toda, Riki Iwasaki, Atsuko Mizoguchi, Ryota Isobe, Katsunori Suzuki, Aika Sakano, Yuika Nakajima, Norio Tanaka, and Koichi Fujita

Journal of the Japan Society of Civil Engineers, Vol. 80 (7) July 2024

[▶ Learn more](#)

2. **Effects of vegetation distribution along river transects on the morphology of a gravel bed braided river**

Zhu, R, Tsubaki, R, Toda, Y.

ACTA GEOPHYSICA Volume 72 (2) Pages: 1097 – 1112 April 2024

[▶ Learn more](#)

3. **A MECHANICAL ANALYSIS OF RIPARIAN TREE DESTRUCTION DURING THE SIMULTANEOUS EFFECT OF FLOOD AND STORM** Peer-reviewed

Yuexia ZHOU, Yuji TODA

Journal of JSCE Volume 12 February 2024

[▶ Learn more](#)

4. **EVALUATION OF GROYNES INSTALLATION AT THE VULNERABLE BANK OF A BRAIDED RIVER** Peer-reviewed

Dr. Zakir HASAN, Yuji TODA

Journal of JSCE Volume 12 February 2024

[▶ Learn more](#)

5. **Estimation of tree density in river channels using ALB survey data and single tree analysis method and its application to hydraulic analysis** Peer-reviewed

Zhou Yuexia, Toda Yuji, Mizoguchi Yuta

Journal of the Japan Society of Civil Engineers, Vol. 80 (16) February 2024

1. **Preparing for the Super Ise Bay Typhoon** Invitation Available

Yuji Toda

Japanese Society of Disaster Medicine March 7, 2025 Disaster Prevention Academic Collaboration

[▶ Learn more](#)

2. **Attempts at technological development to improve and streamline river maintenance management: Using risk assessment of levee erosion, scouring and breaching as an example** Invitation Available

Yuji Toda

Chubu River Maintenance and Management Technology Seminar December 13, 2024 Chubu River Maintenance and Management Technology Seminar

[▶ Learn more](#)

3. **Climate change and heavy rain disasters** Invitation Available

Yuji Toda

Nagoya West Rotary Club November 28, 2024 Nagoya West Rotary Club

[▶ Learn more](#)

4. **Integration of river environmental goal setting and adaptive management based on predictability of physical fields** Invitation Available

Yuji Toda

River Ecology Academic Research Society November 21, 2024 River Ecology Academic Research Society

[▶ Learn more](#)

Takeshi SAGIYA, Prof., Ph.D.



- Born on: July 12, 1964
- Birth place: Tochigi Prefecture, Japan
- Director/Professor, Disaster Mitigation Research Center, Nagoya University
- Earthquake and Volcano Research Center, Graduate School of Environmental Studies, Nagoya University
- Department of Earth and Planetary Sciences, School of Science, Nagoya University
- Room: Disaster Mitigation Research Building (Gensai-kan) 409 / Science E-building, E507
- E-mail : [sagiya\(at\)nagoya-u.jp](mailto:sagiya(at)nagoya-u.jp)

Education

Courses

I am teaching the following courses at the Department of the Earth and Planetary Sciences, School of Science (undergraduate) and the Department of Earth and Environmental Sciences, Graduate School of Environmental Studies (graduate).

- [Disaster Prevention and Mitigation](#) (undergraduate, Spring, J)
- [Geophysics and Planetary Physics Experiments 1](#) (undergraduate, Autumn, J)
- [Science and Technology for Disaster Mitigation 1A: Understanding Natural Hazard](#) (graduate, Spring, J)
- [Geophysics of the Earth's crust](#) (graduate, Spring, J)
- [Geophysics Field Seminar](#) (graduate, Spring, E)
- [Earth Dynamics](#) (graduate, Autumn, E)

Thesis supervision

I belong to the Earth and Planetary Dynamics Group of the Department of Earth and Environmental Science, Graduate School of Environmental Studies. I welcome students who are interested in studying crustal deformation, earthquake/volcanic processes, and evaluation of future seismic hazard. I will be retiring in March 2030. I can accept new students either for the Master course (2 years) or the Doctor course (3 years), but cannot supervise student for the whole graduate courses (5 years). Please refer to the ["Members"](#) page for the current and past students.

Group members

Current members

- Takeshi SAGIYA (Professor)
- Arong (Ariunaa) BAI (D3, China, 2019-)
- Yuchen (Alex) LI (D3, China, 2021-)
- Lishiue CHEN (D2, Taiwan, 2025-)
- Fangzhe SHI (M1, China, 2025-)

Current members (co-supervised)

- Yuto IWASE (D2, 2025-)
- Raihan Fajar Adiwijaya (M1, Indonesia, 2025-)
- Haruna Mabuchi (M1, 2026-)

Past members

- Navin Jayawant KHUNTE (2023-2025 MSc) EnviX, Ltd.
- Ai TAMAOKI (2022-2024 BSc, MSc) Chubu Electric Power Grid Co. Inc.
- Kotaro NOBUKAWA (2023-2024 MEnv) OYO Corporation
- Sindy Carolina LIZARAZO (2017-2024 RS, MSc, PhD, Researcher)
- Naoki YAMADA (2022-2023 MSc) Geospatial Information Authority of Japan
- Peixin (Emma) GAN (2019-2023 RS, MSc) Schlumberger Limited
- Atsushi SHIBATA (2019-2023 BSc) Giken Consul Ltd.
- Yusaku TANAKA (2021-2022 Researcher) Lecturer, Waseda University
- Angela Del Valle MENESES GUTIERREZ (2011-2016, 2019-2022 RS, MSc, PhD, Designated Assistant Professor) NIED
- Yinan MA (2021-2022 RS)
- Noa MITSUI (2005, 2008-2012, 2020-2021 Researcher) Japan Meteorological Agency

My Research

Overview

I have been studying crustal deformation based on geodetic observation such as GNSS and leveling, data analysis, and numerical modeling. My research objectives are to understand the crustal deformation over various spatio-temporal scales in a comprehensive manner with a special focus on various phenomena associated with large earthquakes at subduction zones as well as inland active faults, and also volcanic processes. I also aim to make a better forecast of future large earthquakes. Recent technological advances in space geodesy has enabled us to monitor crustal deformation with a sub-centimeter level accuracy in real-time. By making use of such technologies, we can study physical processes during quiet preparation periods between large earthquakes and volcanic eruptions. Nagoya is located close to the Nankai Trough, a famous plate subduction zone along the southwest Japan, and a lot of inland active faults. I have been conducting dense GNSS observation around active fault zones in central Japan to better understanding inland deformation processes. One of recent important findings is that tectonic loading process of inland faults is not driven by interaction at plate boundaries, but by tectonic stress accumulated in the inland crust. As a result, such loading process is persistent regardless of major plate boundary processes such as the 2011 Tohoku-oki earthquake. I also have had overseas collaborations with research groups in Spain, Colombia, Vietnam, Taiwan, Uzbekistan, and other countries. If you are interested in collaborating or studying with me, please feel free to contact me.

Current projects

-
- GNSS observation around the Nagaoka Plain, Niigata prefecture (Collaboration with the Association for the Developement of Earthquake Prediction)
- Geodetic surveillance on volcanoes in Canary islands (Collaborative Research with INVOLCAN)

Major results

Fault model of the 1944 Tonankai and 1946 Nankai Earthquakes

We analyzed conventional triangulation angle change as well as leveling data to estimate coseismic fault slip distribution of the 1944 and the 1946 Nankai earthquake, the last megathrust event along the Nankai Trough subduction zone. The next megathrust event is expected within this century and knowledge about previous earthquakes are very important for hazard preparedness (Sagiya and Thatcher, 1999).

Publication

Refereed papers

1. [Li, Y., T. Sagiya, Residual Noise Learning for Atmospheric Correction of InSAR Unwrapped Maps, Remote Sensing, 18\(14\), 2359, 2026](#)
2. [Nagaoka, S., Y. Takada, T. Nishimura, T. Sagiya, Y. Ohta, High-resolution strain rate mapping around inland plate boundary within a volcanic arc using L-band InSAR and dense GNSS networks, Scientific Reports, 16, 19575, 2026.](#)
3. [Chen, L., R. Chuang, T. Sagiya, Creep rate changes of shallow active faults in southwestern Taiwan: Insights from InSAR and GNSS analysis, 9th Asia-Pacific Conference on Synthetic Aperture Radar \(APSAR\)/IEEE, 2025.](#)
4. [Li, Y., T. Sagiya, Automatic detection of tectonic surface deformation in InSAR unwrapped maps using deep learning, 9th Asia-Pacific Conference on Synthetic Aperture Radar \(APSAR\)/IEEE, 2025.](#)
5. [Tang, C.-H., Y.-J. Hsu, Y. Okada, Y. Ohta, T. Sagiya, P.-R. Jian, Y. Tamura, T. Jike, Geodetic evidence of shallow slow-slip phenomena beneath the southern Ryukyu forearc, Geophys. Res. Lett., 52, e2025GL114742, 2025.](#)
6. [橋富彰吾・鷺谷威, 不確実性を有する活断層情報の提供のあり方に関する研究, 災害情報, 22, 207-218, 2024.](#)
7. [光井能麻・鷺谷威, 活断層の長期評価と地震動予測に関するアンケート調査 その1：日本活断層学会・日本地震学会編, 活断層研究, 59, 1-14, 2024](#)
8. [Lizarazo, S.C., T. Sagiya, H. Mora-Paez, Viscoelastic earthquake cycle model for the Caribbean subduction zone in northwestern Colombia: Implications of coastal subsidence for seismic/tsunami hazards, Journal of South American Earth Sciences, 141, 104931, 2024](#)
9. [Przeor, M., R. Castalado, L. D'Auria, A. Pepe, S. Pepe, T. Sagiya, G. Solaro, P. Tizzani, J. B. Martinez, N. Perez, Geodetic imaging of magma ascent through a bent and twisted dike during the Tajogaite eruption of 2021 \(La Palma, Canary Islands\), Scientific Reports, 14, 21, 2024.](#)
10. [Alif, S. M., K.-E. Ching, T. Sagiya, W. N. Wahyuni, Determination of Euler pole parameters for Sundaland plate based on updated GNSS observations in Sumatra, Indonesia, Geoscience Letters, 11, 16, 2024.](#)
11. [Magen, Y., A. Inbal, A. Ziv, G. Baer, R. Burgmann, A. Perlolla, T. Sagiya, The elusive role of aseismic slip along a seaward dipping normal fault in the indirect triggering of a normal faulting earthquake sequence in northeast Japan following the 2011 Tohoku-oki megathrust, J. Geophys. Res.: Solid Earth, 129, e2024JB028903, 2024](#)
12. [Cabrera-Perez, I., L. D'Auria, J. Soubestre, M. Przeor, J. Barrancos, R. Garcia-Hernandez, J. M. Ibnez, I. Koulakov, D. Martinez van Dorth, V. Ortega, G. D. Padilla, T. Sagiya, N. Perez, Spatio-temporal velocity variations observed during the pre-eruptive episode of La Palma 2021 eruption inferred from ambient noise interferometry, Scientific Reports, 13, 12039, 2023](#)
13. [Meneses-Gutierrez, A., P. Segall, T. Sagiya, How steady is interseismic crustal deformation in Northeast Japan? Evidence from an integrated analysis of centennial geodetic data, Journal of Geophysical Research: Solid Earth, 127, e2021JB023100, 2022](#)
14. [Sagiya, T., A. Meneses-Gutierrez, Geodetic and geological deformation of the island arc in northeast Japan revealed by the 2011 Tohoku earthquake \(Mw9.0\), Annual Review of Earth and Planetary Sciences, 50, 345-368, 2022](#)

Researchers

Details of a Researcher

Personnel Information

- » [Personnel Information](#)
- » [Degree](#)
- » [Research Interests](#)
- » [Research Areas](#)

Research Activity

- » [Papers](#)
- » [Books](#)
- » [MISC](#)
- » [Presentations](#)
- » [Awards](#)
- » [Grant-in-Aid for Scientific Research](#)
- » [Available Technology](#)

THI THI ZIN



Affiliation

Engineering educational research section Information and Communication Technology Program

Title

Professor

Homepage

<https://www.cc.miyazaki-u.ac.jp/imagelab/members.html>

External Link



Related SDGs



[To the head of this page▲](#)

Degree

【 display / [non-display](#) 】

Doctor of Engineering (2007.3 Osaka City University)

Master of Engineering (2004.3 Osaka City University)

Master of Information Science (1999.5 University of Computer Studies, Yangon (UCSY))

B.Sc (Hons) (Mathematics) (1995.5 University of Yangon (UY))

[To the head of this page▲](#)

Research Interests

【 display / [non-display](#) 】

Image Processing and Its Application 工場での作業の見える化 高度な画像処理技術やAI技術を活用した 研究開発

24-hour monitoring system for the elderly to support independent living ICT Farm Monitoring System Perceptual information processing

[To the head of this page](#)▲

Research Areas

【 display / [non-display](#) 】

Informatics / Perceptual information processing / Image Processing

Informatics / Database

Life Science / Animal production science

[To the head of this page](#)▲

Papers

【 display / [non-display](#) 】

[Hybrid Embedded Feature Matching for Robust Dairy Cow Identification Using 3D Point Cloud](#)

Reviewed

International journal

Pyae Phyo Kyaw, Pyke Tin, M. Aikawa, I. Kobayashi, Thi Thi Zin

Institute of Electrical and Electronics Engineers Inc., Conference Proceedings (ICOE-Taiwan 2026) 123 – 124 2026.7

▶ [More details](#)

[Placement-Free Multi-Camera Monitoring Using Skeletal and Spatial Information](#)

Reviewed

International coauthorship

International journal

Remon Nakashima, Thi Thi Zin, Wan-Jung Chang, Shinji Watanabe

Institute of Electrical and Electronics Engineers Inc., Conference Proceedings (ICOE-Taiwan 2026) 2026.7

▶ [More details](#)

OKAYAMA
University

Graduate School Environmental, Life,
Natural Science and Technology

- Computer Science
- Information and Communication
Systems
- Electrical and Electronic Engineering
- Intelligent Mechanical Systems-
- Advanced Mechanics
- Urban Environment Development
- Mathematical and Data Sciences
- Applied Chemistry
- Rural and Environmental Sciences

<https://www.elst.okayama-u.ac.jp/en/>

TBD

English Certificate is
necessary before
matching.

TOFEL ibt is
acceptable.



Academic staff list of Dept. of Urban Environment Development

Education

Divisions (Master's Course)

Divisions (Doctor's Course)

Research Areas	Instructors	Theme
Design of Timber Structures	Assoc. Prof. (Special Appointment) FUKUMOTO Kouji	Research on the development of elemental technologies and structural design methods necessary for the application of timber structures to medium- and large-scale buildings
Aseismic Design of Structures	Prof. HIEJIMA Shinji	Study on wind and tidal current power generation
	Assoc. Prof. Alwashali Hamood	Seismic evaluation of buildings/seismic retrofit/performance assessment design/building structure/seismic disaster prevention
Design of Steel Structures	Prof. NISHIYAMA Satoshi	Development of modeling and analytical methods for reducing the risk of geohazard
	Assoc. Prof. KIMOTO Kazushi	Application of vibration and wave propagation theories to the monitoring of civil infrastructures
Hydraulic Engineering	Assoc. Prof. AKOH Ryosuke	Development of practical hydraulic model and numerical simulation for water disaster prevention
	Assoc. Prof. YOSHIDA Keisuke	Study on prevention and mitigation of fluvial disasters
Geotechnical and Groundwater Engineering	Prof. TAKESHITA Yuji	Geotechnical site characterization by in-situ non-destructive testing
	Prof. KOMATSU Mitsuru	Research on investigation of groundwater flow and preservation of geo-environment

Architectural Design and Theory	Assoc. Prof. KAWANISHI Atsushi	Development of design methodologies and design practices that sustainably integrate with the environment
Architecture and Urban Spatial Planning	Assoc. Prof. HORI Hirofumi	Architecture and urban spatial planning for creating good quality of living environment as housing stock, and Area-based management/ Business Improvement District
	*Asst. Prof. PARK Minjeong	The historical transition and conservation of modern architecture
Design of Concrete Structures	Prof. AYANO Toshiki	Durability of concrete structures
	Assoc. Prof. FUJII Takashi	Development of environment conscious materials for construction works
Urban and Building Environmental Engineering	Prof. NARUMI Daisuke	How it should be the state of cities, architecture, and energy systems to realize sustainable and comfortable urban spaces.

Choosing a Master's Supervisor in Japan

(Avoid These Roles for Primary Supervision)

Professor Type	Japanese Title	Why Avoid?
Adjunct Professor	非常勤講師 (Hijōkin Kōshi) / 客員教授 (Kakuin Kyōju)	Part-time, limited resources
Visiting Professor	客員教授 (Kakuin Kyōju) / 訪問教授 (Hōmon Kyōju)	Temporary, may leave mid-program
Assistant Professor	助教 (Jokyō) / 准教授 (Junkyōju)	Limited experience, funding, or tenure

Recommended Supervisors

- ◆ **Full Professor, Associate Professor (教授, Kyōju)** – Experienced, stable, well-connected

Audience

(2) RP for Selection Committee

✓ A issue of socioeconomic development

- An important issue (of your country)?
- Meets the component concept (you are applying for)?
(See “expected research areas” of MJC’s scholarship program)



✓ Important policy question

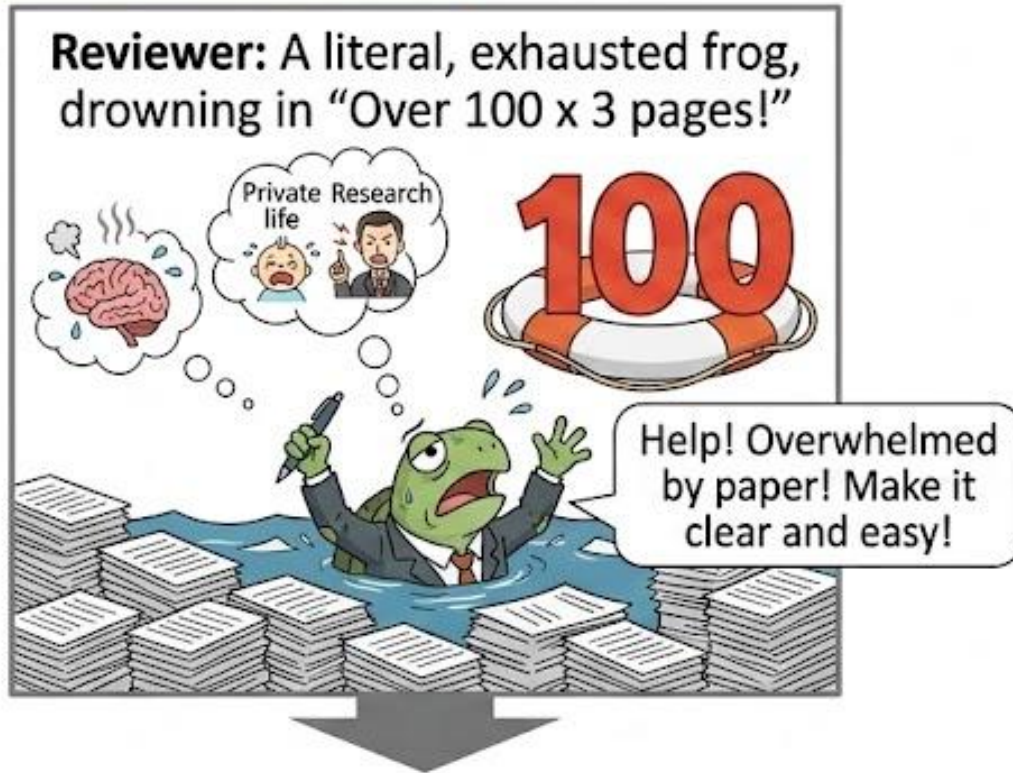
- What you are trying to question in your research?
- Is your question is also academically important?

✓ Career advancement

- Your research match your current work?
- Will your research benefit your career in the future?



Before writing, we need to understand the reviewer's situation ✨



Your story should be easy to understand at a glance.

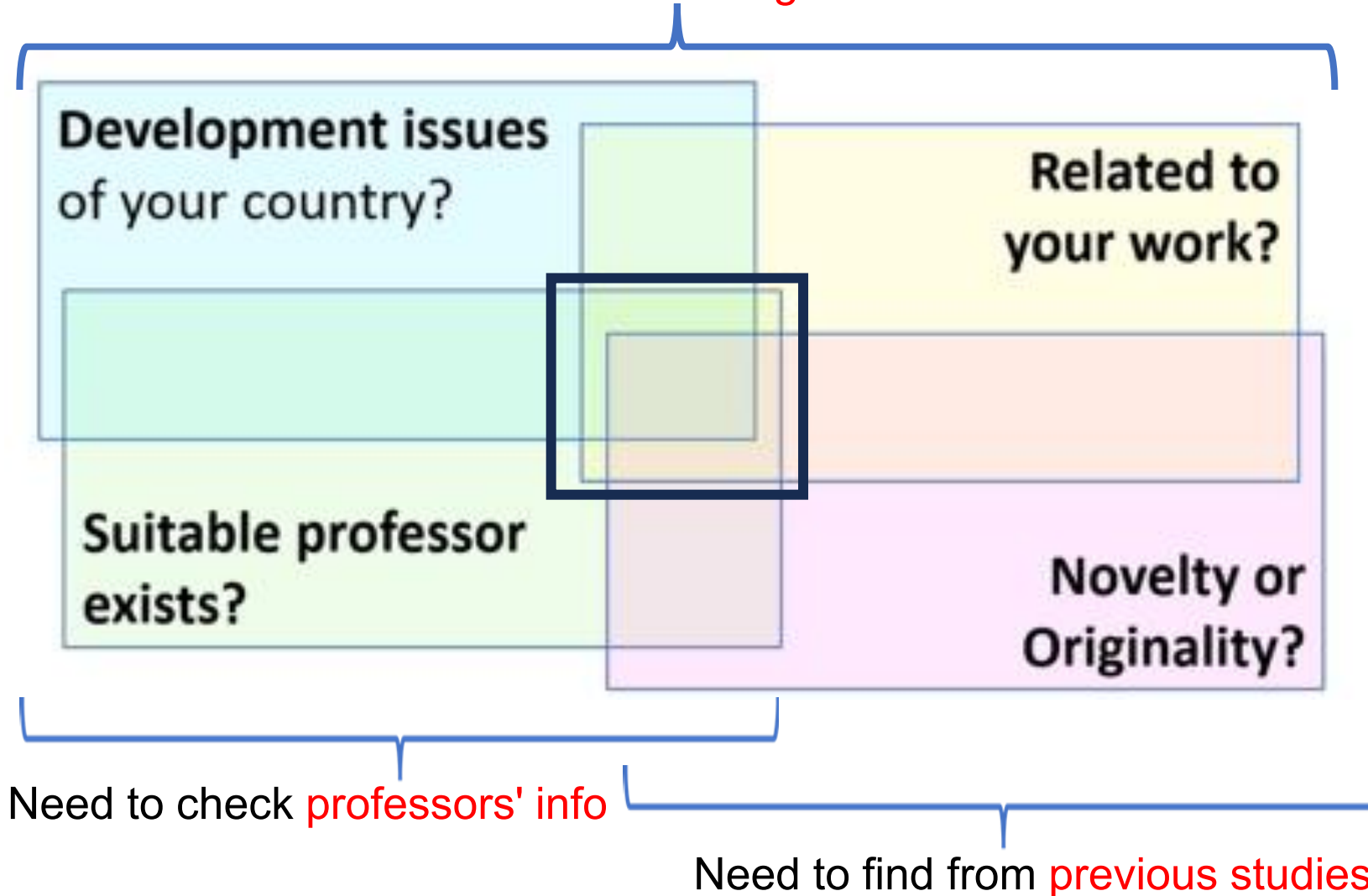


Your proposal needs to be **understood quickly & easily** by your reviewers!!!

“Research proposal for selection”

Many applicants are well aware of these points...

but not enough!



What helps you make a Good Proposal?

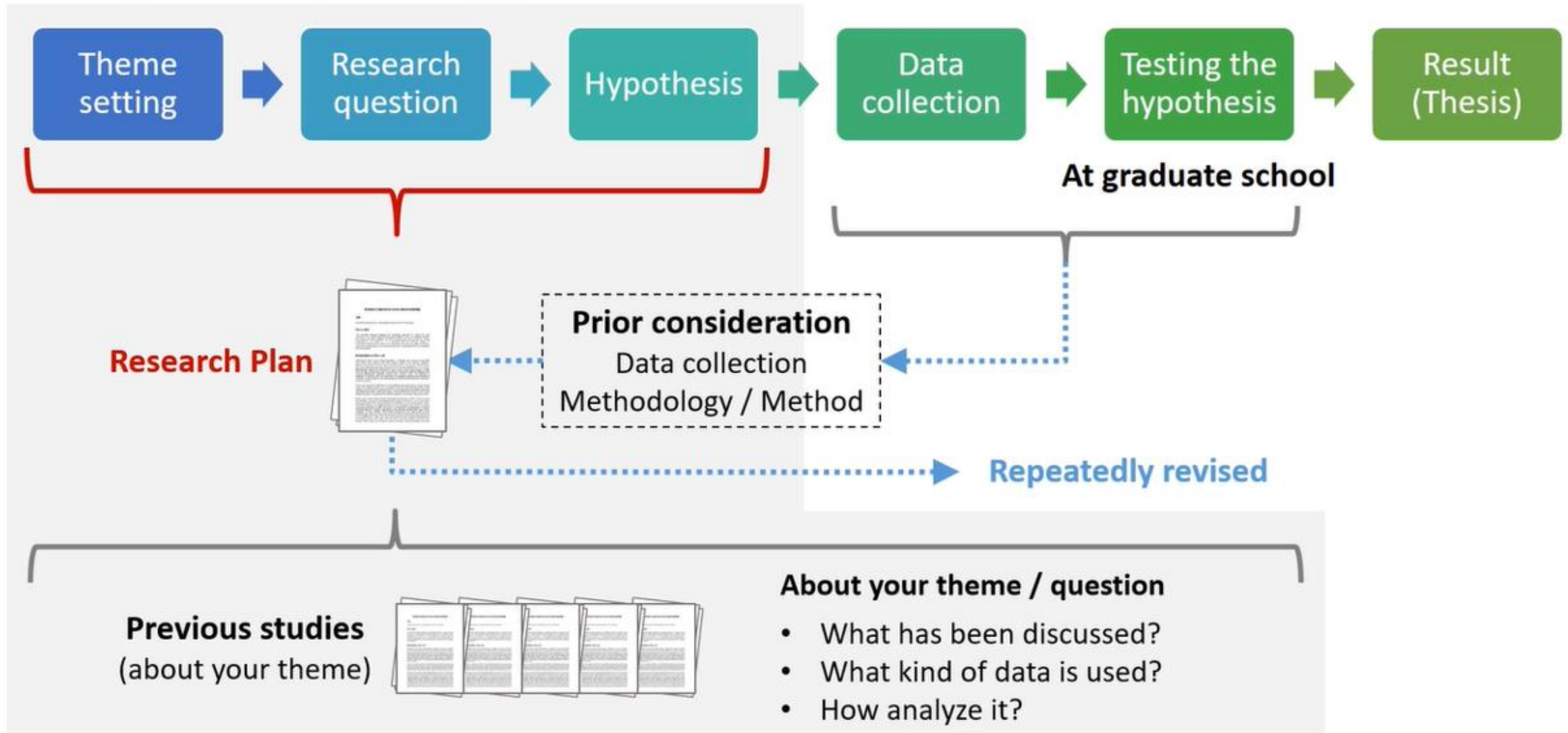
Effective Storytelling

helps the reviewer to empathize with your story



Wow! I can easily
comprehend this
story!

Research Process



Engineering Research Process

1. Starting Point:

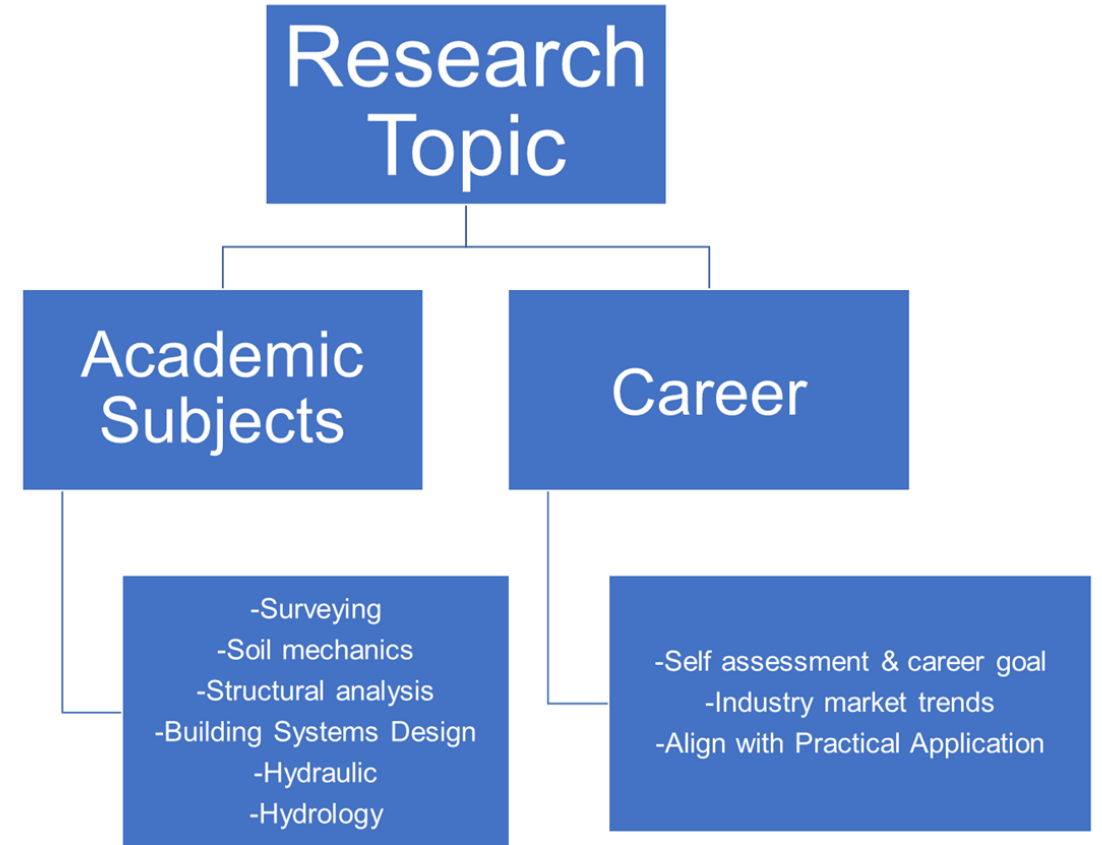
Define a Research Topic/Theme

- Focus on a **problem, question, or phenomenon**
- Aim to find **solutions, theories, or principles**

2. Key Difference from Scientific Research:

Engineering Research Ends with Application

- Not just discovery → **practical implementation** of solutions



How to Define Your Research Topic

- Start with a **general idea** or research area
- Narrow it down to a **specific research question**

Ask Yourself:

- Is it **related to real life**? (Applied research focus)
- Does it address a **societal problem**?
- Is it **useful, interesting**, and **not overdone**?
- Is the topic **focused and specific**?
- Does it **fill a gap** in existing research?
- Will it **generate new knowledge**?
- Who will **benefit** from this research? (e.g., professionals, policymakers)
- Will it **resolve current controversies** or advance understanding?



Choosing a Research Topic: Key Considerations

1. Personal Motivation is Crucial

❤️ **Choose a topic you love** – You'll spend months researching it!

⚖️ **Balance passion & feasibility** – Avoid overly broad or narrow topics



2. Supervisor Alignment Matters

🔍 **Select a topic that interests your supervisor** – Increases engagement and support

📖 **Review their publications** – Ensures expertise in your chosen area

3. Stay Flexible

🔄 **Be open to adjustments** – Initial ideas often evolve after discussion

Narrowing a Research Theme – From Floods to Pluvial Floods

1. Broad Theme:



"Flood Risk Management"

(Too vague – covers riverine, coastal, flash floods, etc.)

2. Narrowed Scope:



"Urban Flooding"

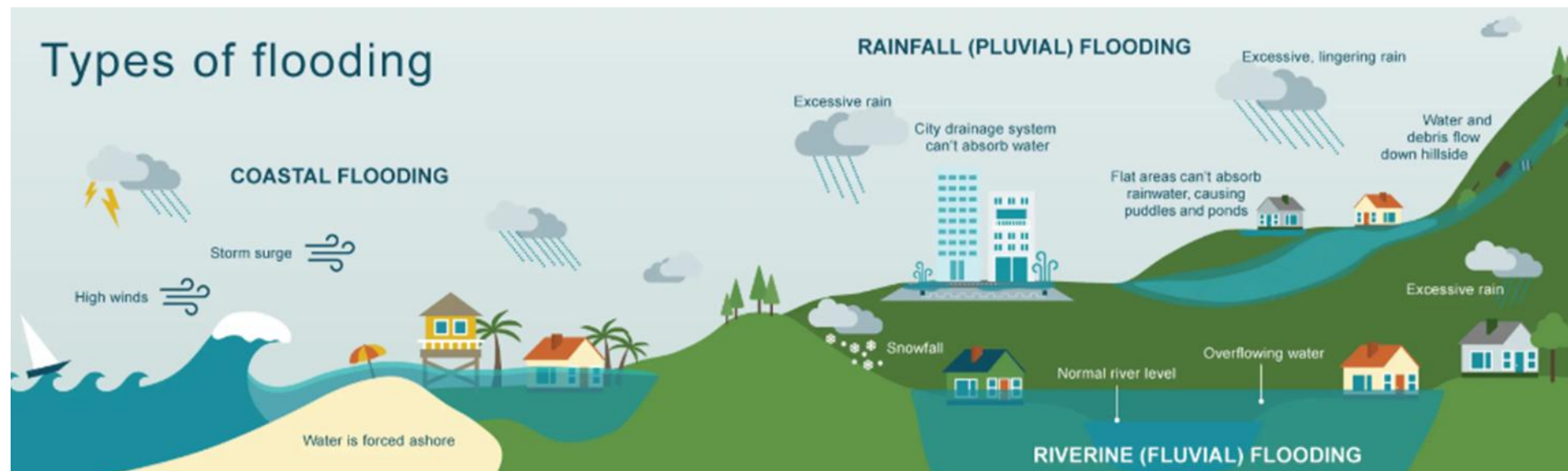
(Focus on cities, but still includes multiple flood types)

3. Specific Focus:

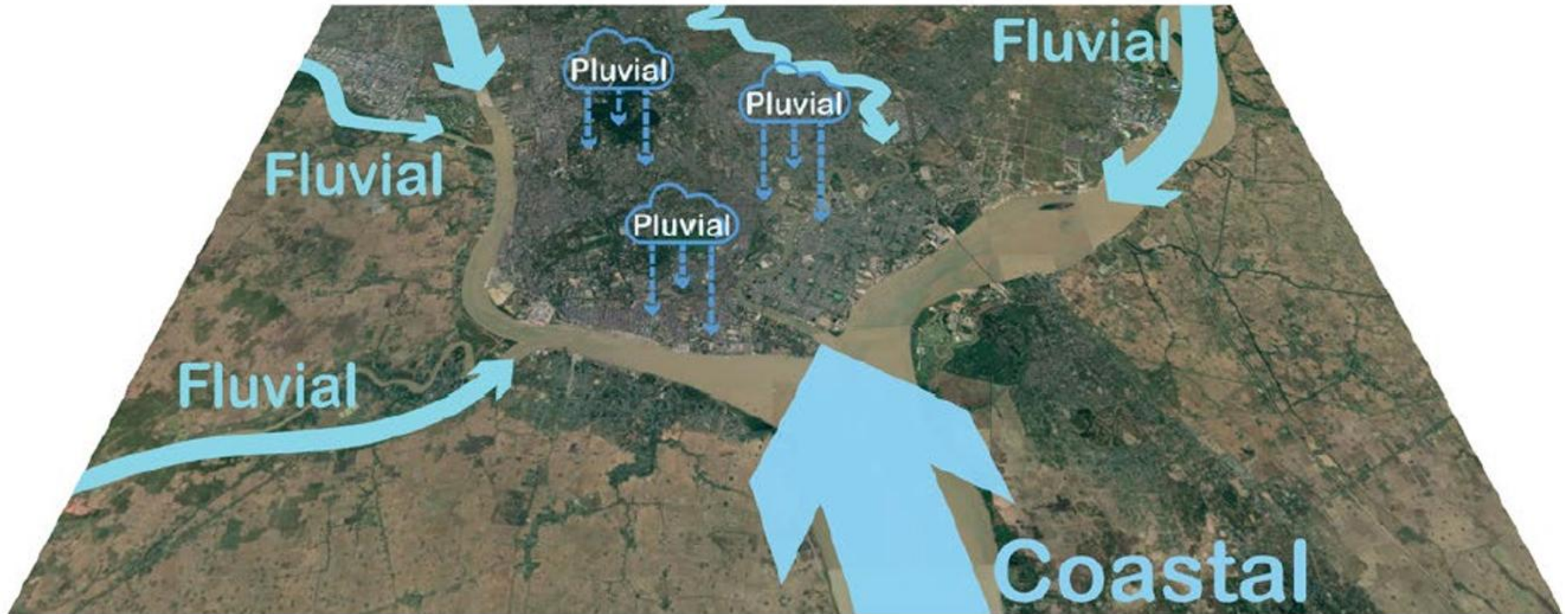


"Pluvial Flooding in Lowland Cities"

(Rainfall-induced, excludes riverine/coastal floods; adds terrain constraint)



Three Flood Hazards in Yangon Region



Source- Flood Risk Assessment in Yangon, Myanmar; Kaung Khant Nyein (May 12, 2023)

Research Proposal Preparation

Key Components of a Research Proposal

Outline for R Proposal	Key Content
1.Title	Specific, accurate, concise, catchy
2.Abstract	Overview of topic and intent
3.Introduction	Topic Overview
• Problem Statement	What issue are you addressing?
• Research Question	Defines the central inquiry
• Hypothesis	Presents a testable prediction
• Aims & Objectives	What do you want to achieve?
• Significance	Why is this topic important?
• Audience	Who benefits from your research?
4.Literature Review	Current knowledge and gaps
5. Methodologies	How will you conduct the research?
6. Expected Results	What do you anticipate discovering?
7. Project Outline	Structure and timeline
8. Bibliography	A compiled list of all academic sources

Research Title

Title

- Specific & accurate
- Not too long
- Catchy
- Contain the main idea
- Start with an action verb

Examples

- Simulation of
- Comparison of
- Assessment of
- Development of
- Defining
- Identifying
- Screening
- Understanding
- Developing
- Impact study of

Incorrect vs. Correct

Research Titles

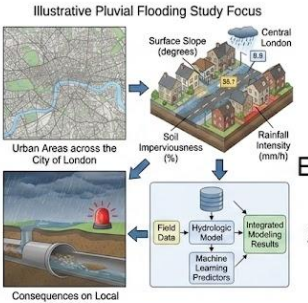


An Analysis of Pluvial Flooding Susceptibility Parameters in Urban Areas across the City of London and the Consequences on Local Drainage Systems



Identifying Key Environmental Predictors of Pluvial Flooding Susceptibility in Central London through Integrated Modeling

Illustrative Pluvial Flooding Study Focus



Urban Areas across the City of London

Surface Slope (degrees)

Soil Imperviousness (%)

Rainfall Intensity (mm/h)

Central London

Field Data

Hydrologic Model

Machine Learning Predictors

Integrated Modeling Results

Consequences on Local Drainage Systems

#SmartShorts

Visit enago.com/academy today to know more about publishing!

Abstract

- Written **last** (after completing your research)
- **Max 250 words**
- Provides a quick **overview** of your entire research:
 - **Background**
 - **Research problem**
 - **Objectives**
 - **Methodology**
 - **Key results (Expected)**
 - **Target audience & impact**
- Should be **clear, concise, and well-structured**
- Reader should grasp the **essence** of the work in 3–4 minutes

Natural Hazards (2024) 120:8871–8892
<https://doi.org/10.1007/s11069-024-06555-8>

ORIGINAL PAPER

Objective

Research Area

Methodology



Assessment of pluvial flood events based on monitoring and modeling of an old urban storm drainage in the city center of Yangon, Myanmar

Where? Scope

Aung Khaing Min^{1,2,3} · Takashi Tashiro⁴

Received: 9 March 2023 / Accepted: 6 March 2024 / Published online: 21 April 2024
© The Author(s) 2024

Abstract

Background

Problem

Method

Findings

Pluvial flooding is a critical issue in cities worldwide, particularly in lowland areas with old and deteriorating drainage systems. The primary driver of pluvial flooding is extreme rainfall; other drivers include urbanization, inadequate drainage systems, improper solid-waste management, and the tidal backwater effect. However, the interplay between these drivers makes predicting pluvial floods difficult and complex. Previous studies in developing countries seldom used water-level data or simulation modeling to identify the causes of pluvial flooding. In this study, rainfall data and water-level variations in an open channel drain and a receiving river controlled by sluice gates were collected and evaluated in detail to investigate pluvial flooding events. To predict these events, we generated a hydrodynamic model using InfoWorks ICM and verified its results using water logger data and official field reports. Analysis shows that drainage-system failures due to solid blockage and receiving water-level variation contribute more to pluvial flood occurrence than heavy rainfall. Lastly, we discuss measures to mitigate pluvial flooding in Yangon, Myanmar. The proposed monitoring and modeling approach can suitably predict pluvial flooding occurrence and provide useful quantitative data for flood risk management.

Keywords Pluvial flooding · Old storm drainage system · Tidal backwater effect · Monitoring · Central Yangon of Myanmar · InfoWorks ICM

Introduction

```
graph TD; A[Introduction] --> B[Hook]; A --> C[Context]; A --> D[Rationale]; A --> E[Objectives];
```

Hook

Context

Rationale

Objectives

Key Components

- ◆ **Hook** – Capture interest with a strong opening
- ◆ **Context** – Briefly outline the research problem & gap
- ◆ **Rationale** – Explain why the study matters
- ◆ **Objectives** – State clear research aims

Pro Tips

- ✓ **Show motivation** – Link to personal/professional relevance
- ✓ **Preview structure** – Summarize proposal sections in 1 paragraph
- ✓ **Write last** – Finalize intro after completing the full proposal

Problem Statement

- Clearly contextualized & Concise
- Problem defined with measurable data
- Use of statistics or figures encouraged
- Clearly describe existing hypotheses
- Highlight your proposed contribution
- Explain what makes the problem critical
- Emphasize potential impact

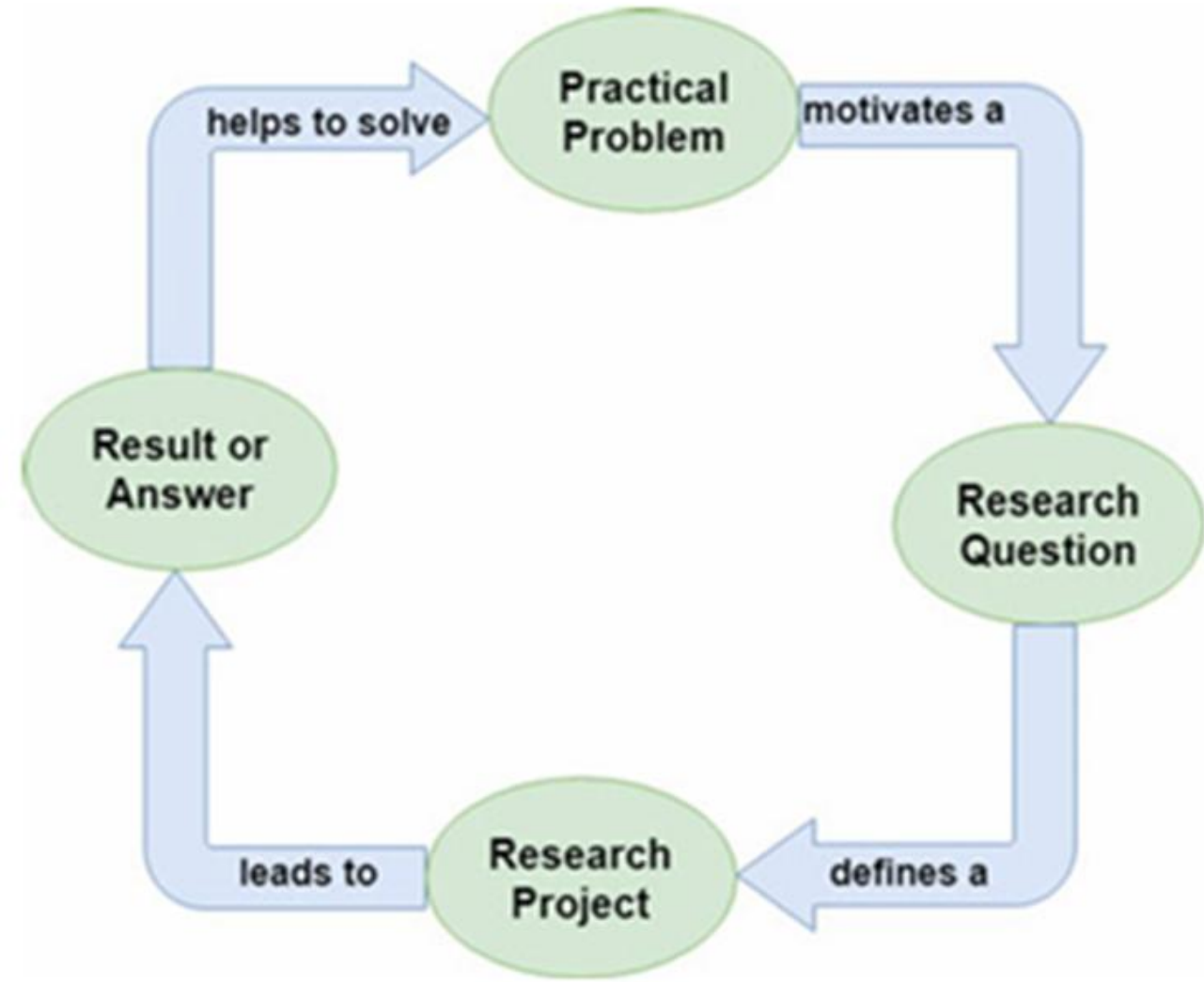


Fig. -The research flow diagram

Sources of Research Problems

Key Sources

- **Personal Experiences**

Insights from daily life or professional challenges

- **Literature Review**

Gaps, inconsistencies, or limitations in previous studies

- **Expert Opinions**

Consultations with professionals or academics

- **Internet Sources**

Online databases, forums, news, and research portals

- **Theories & Models**

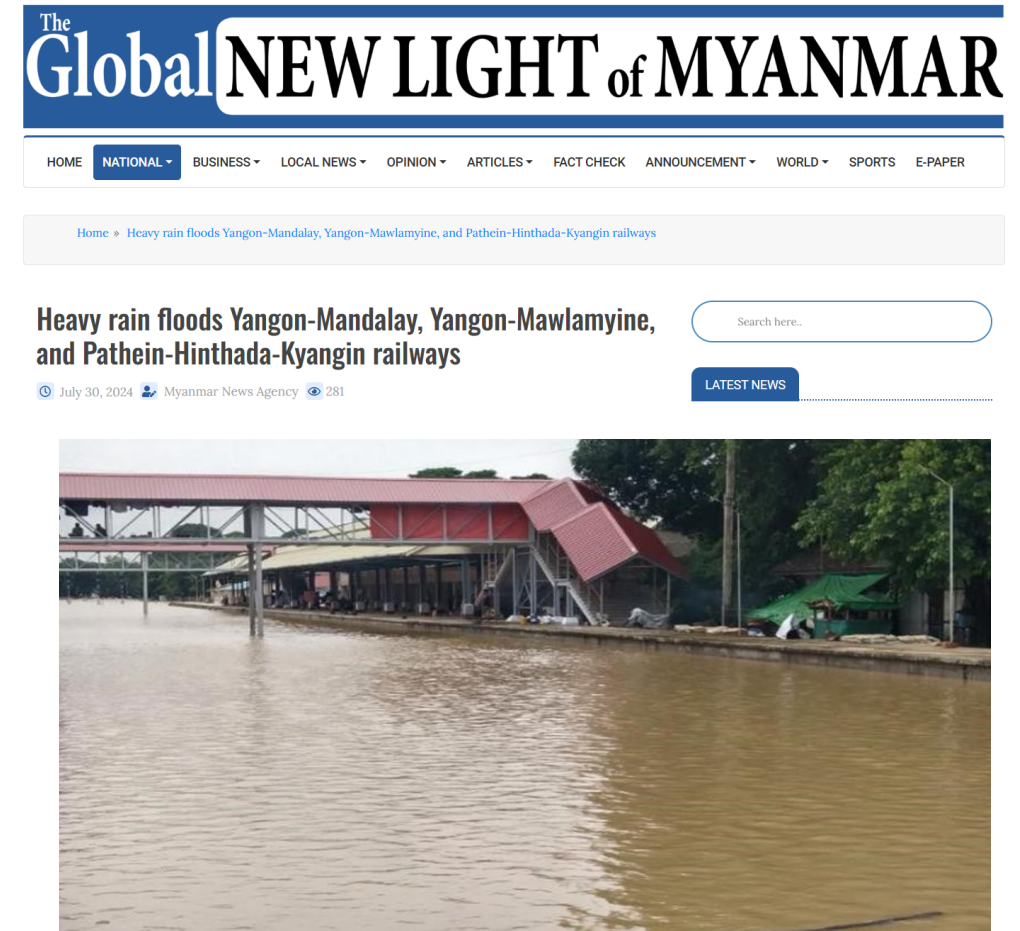
Need to test, expand, or refine theoretical frameworks

- **Replication Studies**

Verifying results of previous research

- **Government Publications**

Policy papers, reports, and official statistics

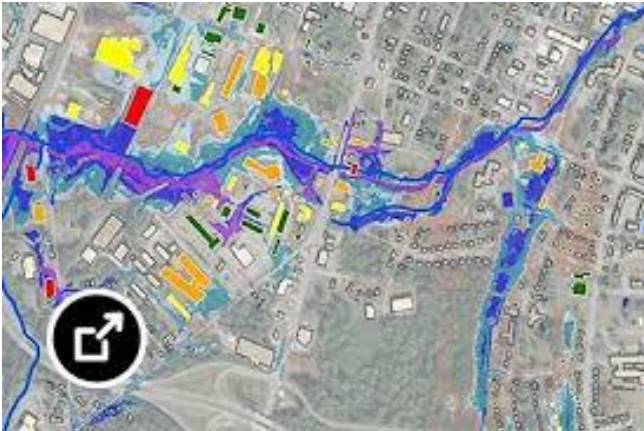


Suitability of Research Problems

Key Selection Criteria

- ✓ **Relevance** – Aligns with researcher's expertise & career goals
- ✓ **Interest & Motivation** – Sparks enthusiasm for sustained investigation
- ✓ **Competence** – Matches researcher's skills (or ability to learn)
- ✓ **Resource Availability** – Equipment, funding, and data accessible
- ✓ **Time Feasibility** – Solvable within project deadline

InfoWorks® ICM



Research Questions: The Core of Your Study

Criteria of the research question

1. The question is **worth asking?**

- Academic significance Many researchers are interested in your question
- Social significance Answering the question contributes to the society

2. The question **remains unanswered?**

- No meaning in doing research that has already been answered by others
(That's why, checking previous studies is important)

3. The question **can be answered?**

- Must be answered in the period of the 2-year Master program
- Availability of data and reference, observable research target, etc.

Understanding Research Hypotheses

➤ What is a Hypothesis?

A hypothesis is a statement that explains the predictions and reasoning of your research—an **“educated guess”** about how your scientific experiments will end.

“If fiber-reinforced concrete (FRC) is used instead of traditional concrete, **then** the cracking resistance of the structure will increase **because** the fibers provide better tensile strength.”

Why This Works:

- Clear & Testable:** Compares FRC vs. normal concrete in real construction.
- Relevant to Civil Engineering:** Directly relates to materials and structural durability.
- Practical Impact:** Helps decide whether FRC is worth the cost for crack prevention.



(a) Plain concrete (b) FRC

Defining Aim & Objectives



- **Aim** = General purpose of your research
 - Like a **bullet** – short, focused, clear
 - Answers a **general problem**
 - Must be **understandable to anyone** (even non-experts)
 - Linked to your **motivation** and **societal relevance**
 - **One strong sentence** is enough

SMART Objectives



- **S – Specific**

- Clear and focused on a defined issue



- **M – Measurable**

- Results can be tracked and assessed



- **A – Attainable**

- Achievable with available resources and capacity



- **R – Realistic**

- Practical and grounded in real constraints



- **T – Time-bound**

- Has a clear start and end date

- Reviewers assess objectives using **SMART**—ensure yours meet all criteria
- Start with a well-defined **problem**, then shape your **aim**, and break it into **SMART objectives**

Significance

Define the Importance:

- Why is this research relevant?
- What is the added value or originality?

•Originality:

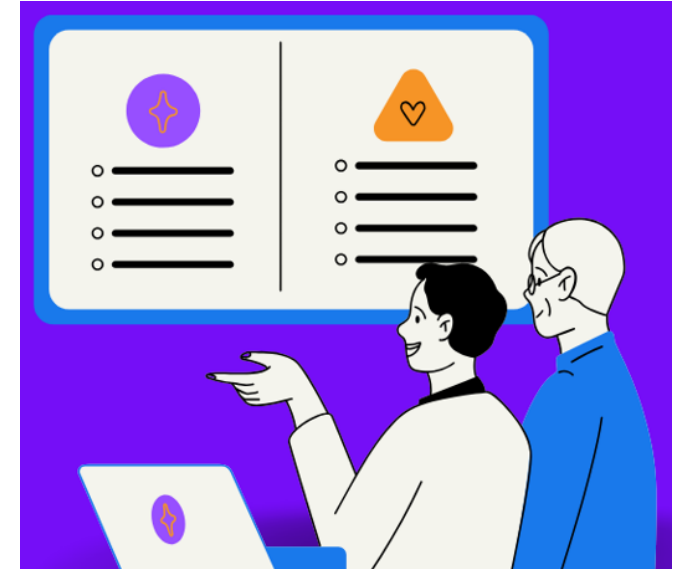
- Even if the topic is not new, how will your approach be unique?
- Show how your work contributes **differently** to existing knowledge

•Added Value:

- The research should lead to practical, meaningful outcomes
- Align the significance with the **main aim** of the study

•Defend and Present:

- Be prepared to justify the relevance, even if others don't initially see its importance



Previous studies

- Existing knowledge = Previous studies
- Research = To **add something new** to the existing knowledge

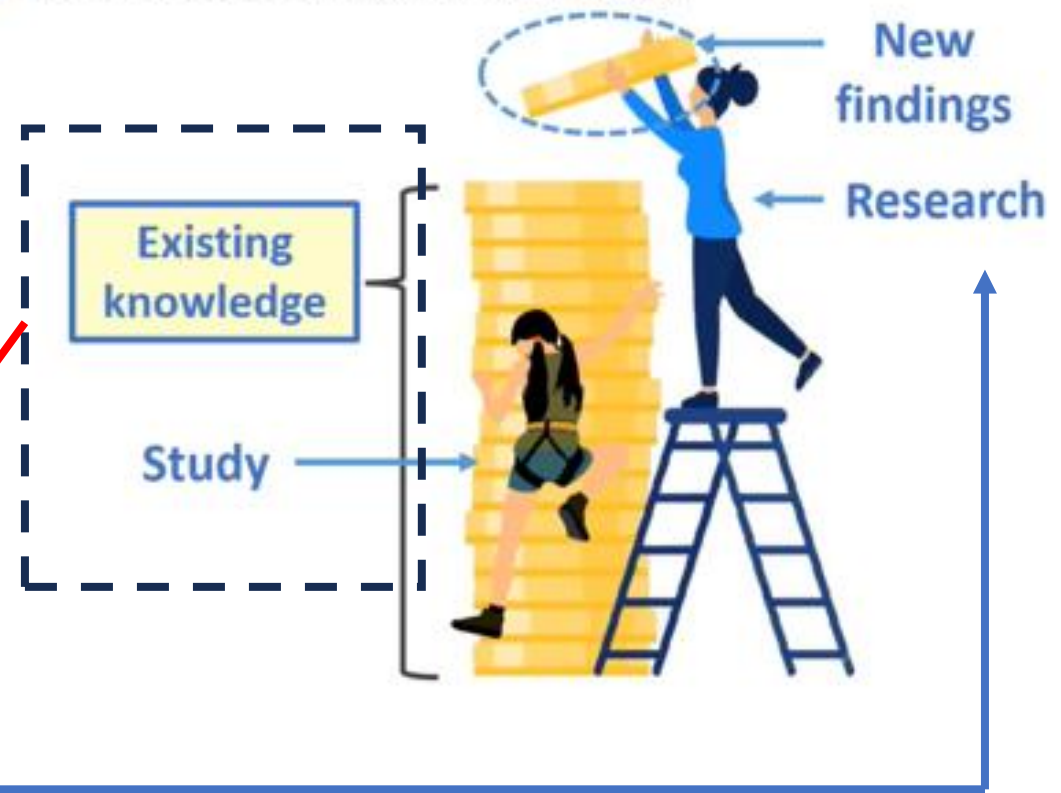
How can you show **your research** has something new?

(About your theme / question)

What is already known?

What is **NOT** yet known?

Limitation, Weakness



Previous studies

Previous studies = Basic understanding about your theme

- To know what is known and **what is not yet known**
- To know **what issues** has been (academically) debated
- To know **how the issues are** analyzed (methodology, method)

A clue to find
your novelty
and originality

What to read?

- General books, articles, reports
 ↑ But, not enough.
- Academic journals and thesis



Previous studies

How to find & read the academic papers (Example)

1. Searching papers ... Library and online database (Google scholar, etc.)

2. Check **titles** in search results



Free download
Paid papers
Membership

(1) Check **hypothesis & research question**

You can see **what this paper analyzed**

(2) Check **Idea & Significance**

Literature review part

You can see **how this paper find the limitation of previous studies** to derive the hypothesis

3. Read the **abstract**



Check **if the paper matches your research**

(3) Check **methodology / method**

You can see **how this paper measured the concept / variables focused by the hypothesis, and how the data was collected and analyzed**

Considerations in Search

- Search effectiveness depends on **skills and experience with databases**
- Consult with professionals for guidance
- **Using Keywords**
 - Derived from the **review subject and scheme**
 - Start by reading papers to identify **relevant keywords**
 - Seek advice from **advisors/colleagues**
 - Use the reference section of papers to find **additional literature and new keywords**
- **Tips for Effective Keyword Search**
 - Start with 2-3 keywords, but may yield too many results (e.g., 132,000 results for "hybrid, additive, manufacturing")
 - Narrow down by adding **more specific keywords or two-word phrases**
- **Challenges with New or Rare Topics**
 - Literature may be **sparse**, so try **less-direct keywords**
 - Once a few papers are found, **use their references and content for further search hints**

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Stand on the shoulders of giants

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flood risk management

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Articles

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Flood risk management—a basic framework
[J.Schanze](#) - **Flood risk management: Hazards, vulnerability and ...**, 2006 - Springer
... **flood** protection to **flood risk management** (eg Budapest Initiative 2002, EU 2004). **Flood risk management** deals with a wide array of issues and tasks ranging from the prediction of **flood** ...
☆ Save 99 Cite Cited by 414 Related articles All 4 versions

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Sort by date

Flood risk perception and implications for **flood risk management** in the Netherlands
[PJA Baan, F.Klijn](#) - **International journal of river basin management**, 2004 - Taylor & Francis
... for practical **flood risk management** and **risk** communication. It ... **flood risk** at all, and how do they expect a **flood** will affect their lives. We address these issues, as **flood risk management** ...
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Review articles

[HTML] A review of the current status of **flood** modelling for urban **flood risk management** in the developing countries
[UC Nkwunonwo, M Whitworth, B Bailey](#) - **Scientific African**, 2020 - Elsevier
... **flood risk management** approaches which incorporate **flood** modelling. This paper is part of a research programme which is assessing and modelling urban **flood** ... **flood risk management** ...
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An analysis of the current practice of policies on river flood risk management in different countries
[P.Samuels, F.Klijn, J Dijkman](#) - **Irrigation and Drainage: The ...**, 2006 - Wiley Online Library
... hazard (ie inundation) with the consequences of **flooding** ... a **flood** as being an event in which some "risks" are actually experienced. For **flood risk management** we prefer to define **flood** ...
☆ Save 99 Cite Cited by 158 Related articles All 12 versions

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[HTML] Urban and **river flooding**: Comparison of **flood risk management** approaches in the UK and China and an assessment of future knowledge needs
[M.Rubinato, A.Nichols, Y Peng, J.Zhang](#)... - **Water science and ...**, 2019 - Elsevier
... and **river flooding**, putting people and property at increased **risk**. This paper presents a review of the current **flooding** ... from previous **flooding** events in the UK and China, and (2) which ...
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Review articles

Flood risk and flood management
[EJ Plate](#) - **Journal of hydrology**, 2002 - Elsevier
... will reduce the **flood risk**. These two aspects of **flood risk management** will be considered ... always on high ground or on the high bank of the old **river flood** plain. And if an extremely rare ...
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[HTML] sciencedirect.com

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coastal flood risk management

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Articles

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Coastal-flood risk management in central Algarve: Vulnerability and **flood risk** indices (South Portugal)
[AM.Martinez-Graña, T.Boski, JL Goy, C Zazo](#)... - **Ecological ...**, 2016 - Elsevier
... This analysis is based on the **flood** hazard index –FHI-, generating in this paper a novel ... of vulnerability, we estimated the **coastal flood** hazard in different scenarios, considering that ...
☆ Save 99 Cite Cited by 82 Related articles All 10 versions

Sort by relevance

Sort by date

Building infrastructure resilience in coastal flood risk management
[M.Karamouz, M.Taheri, P.Khalili](#)... - ... and **Management**, 2019 - ascelibrary.org
... intensity of **floods**. In order to cope with the new challenges in **coastal flood management**, many ... These efforts call for better understanding of **flood** hazard, better understanding of the ...
☆ Save 99 Cite Cited by 55 Related articles All 3 versions

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Review articles

Deep uncertainties in sea-level rise and storm surge projections: Implications for coastal flood risk management
[PC.Oddo, BS.Lee, GG.Garner, V.Srikrishnan](#)... - **Risk ...**, 2020 - Wiley Online Library
Sea levels are rising in many areas around the world, posing risks to **coastal** communities and infrastructures. Strategies for **managing** these **flood** risks present decision challenges that ...
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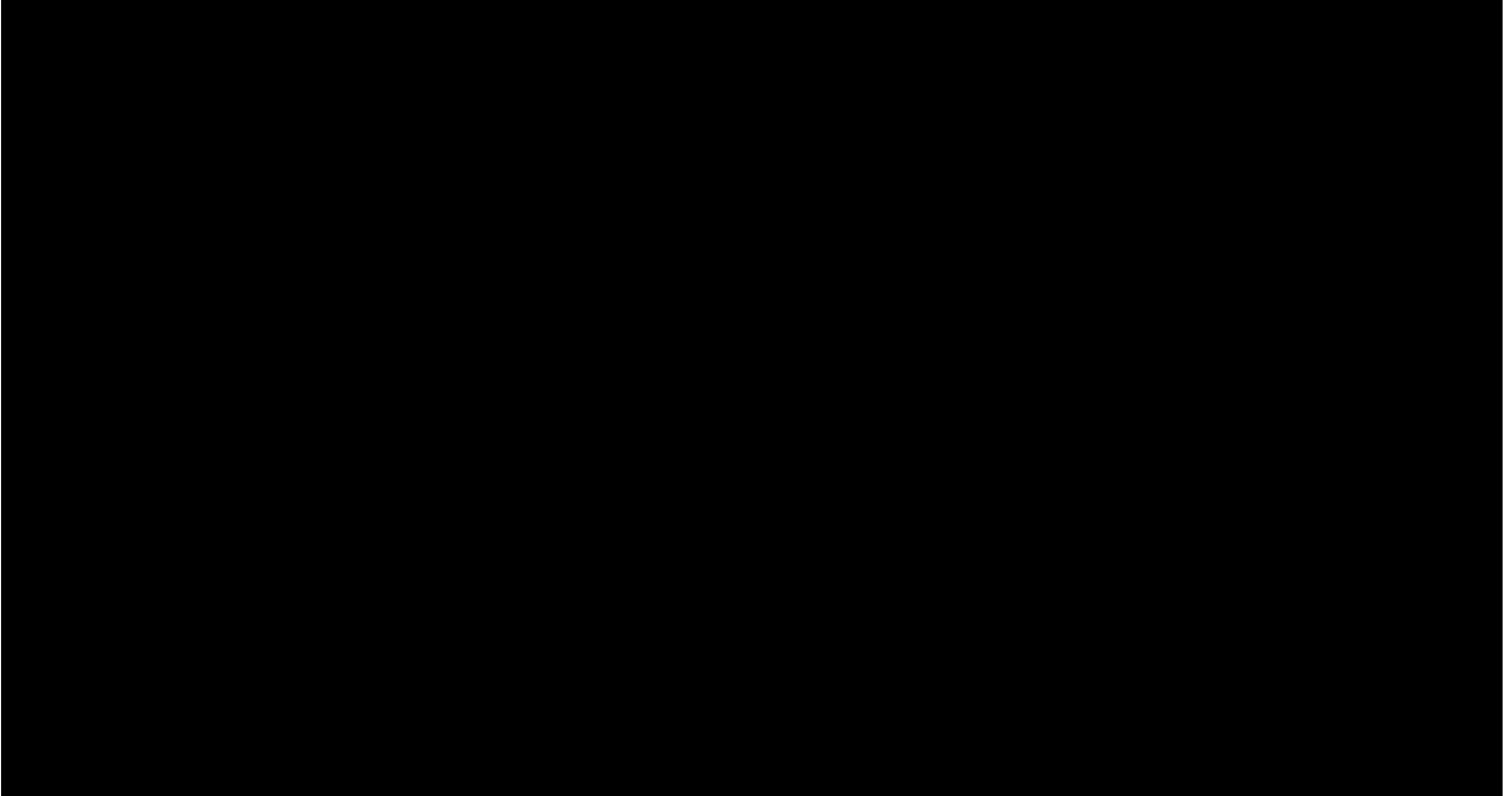
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[PDF] academia.edu

[PDF] researchgate.net

[PDF] wiley.com

Research Gate





Ryota Tsubaki

Doctor of Engineering · Professor (Associate) at Kobe University
Kobe, Japan

99 Research and development related to (1) field monitoring in rivers and (2) flood inundation analysis

1,119 Research Interest Score | 1,501 Citations | 16 h-index

- Profile
- Research (103)
- Stats
- Following
- Following
- ...

About Ryota

Sediment transport in gravel-bed river
Flood impact on small rivers environment
High-resolution inundation flow simulation

Disciplines

Remote Sensing · Hydrology · Geography

Shared connections



Takashi Tashiro
Nagoya University

Following



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[HTML] **Causes, impacts, and mitigation strategies of urban pluvial floods in India: A systematic review**

[HTML] sciencedirect.com

[H Singh](#), [M Nielsen](#), [H Greatrex](#) - International journal of disaster risk ..., 2023 - Elsevier
... context of India, how do we define urban **pluvial flooding**? 2) What factors **cause** urban **pluvial flooding** in India? 3) What are the impacts of urban **pluvial flooding** in India? and 4) What ...

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Urban pluvial flooding: a qualitative case study of cause, effect and nonstructural mitigation

[PDF] academia.edu

[I Douglas](#), [S Garvin](#), [N Lawson](#)... - Journal of **Flood Risk** ..., 2010 - Wiley Online Library
... The prime objective of this study was to establish the **cause** and the effect of urban **pluvial flooding** and to consider how the effect can be mitigated with nonstructural measures. In the ...

☆ Save Cite **Cited by 147** Related articles All 12 versions

An analysis of the combined consequences of pluvial and fluvial flooding

[PDF] exeter.ac.uk

[AS Chen](#), [S Djordjević](#), [J Leandro](#)... - Water Science and ..., 2010 - iwaponline.com
... The main purpose of the paper is to provide an approach to analyse the **flood causes** for an ... fluvial **flooding**, **caused** by heavy rainfall in upstream catchments, and the **pluvial flooding** ...

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[HTML] **Urban pluvial flooding and stormwater management: A contemporary review of China's challenges and "sponge cities" strategy**

[HTML] sciencedirect.com

[Y Jiang](#), [C Zevenbergen](#), [Y Ma](#) - Environmental science & policy, 2018 - Elsevier
In recent years, urban **pluvial flooding caused** by extreme rainfall has increasingly occurred across China. This paper reviews the challenges faced by China in addressing urban **pluvial** ...

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[HTML] Differentiated Hydrodynamic Assessment of **Pluvial** and Fluvial **Flooding** in the Downstream Periyar Catchment Under Return Period Based Scenarios

RRM Puthanveed, SK Damodaran - KSCE Journal of Civil Engineering, 2026 - Elsevier

... Kerala **flood** as a validation base model. The aim of this study is to isolate and compare **pluvial** and ... a defensible attribution of the dominant **flood** mechanism, revealing how each driver ...

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[HTML] sciencedirect.com

Beyond the Banks: Urbanization, Infrastructure, and the Fight Against **Flooding**

MA Hummel - Climate Change Impacts in Texas, 2026 - api.taylorfrancis.com

... a river channel, **causing** overflows into the adjacent floodplain. **Pluvial** or urban **flooding** results when ... Fluvial and **pluvial flood** hazards, the focus of this chapter, vary significantly in both ...

☆ Save Cite Related articles

[HTML] Urban **pluvial flood** susceptibility assessment for the central Lin'an District in Hangzhou, China, using the GNNWLR model with SHAP interpretability

J Xia, T Liu, H Hou, H Zhang, T Hu - Journal of Hydrology: Regional Studies, 2026 - Elsevier

... exPlanations (SHAP) to evaluate urban **pluvial flood** susceptibility. Twelve predictors derived from ... To address the class imbalance **caused** by limited **flood** samples, a hybrid resampling ...

☆ Save Cite Related articles

[HTML] sciencedirect.com

A statistical framework for compound **pluvial**–fluvial **flood** risk assessment

A Singh, S Shukla, PJ Sharma - Hydrological Sciences Journal, 2026 - Taylor & Francis

... **floods** arise from river overflows due to prolonged or extreme precipitation (Merz et al.

Citation2010), **pluvial floods** ... first **cause pluvial flooding** before translating into fluvial **flooding** as ...

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Original Articles

Capital Structure and Investment Financing of Small and Medium-Sized Enterprises in Vietnam

Huong Thi Trinh, Makoto Kakinaka, [Donghun Kim](#) ✉ & Tae Yong Jung

Pages 325-349 | Published online: 21 Jun 2017

🗨 Cite this article

<https://doi.org/10.1080/1226508X.2017.1340184>



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ISSN: 1226-508X (Print) 1744-3873 (Online) Journal homepage: <http://www.tandfonline.com/loi/rger20>

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Capital Structure and Investment Financing of Small and Medium-Sized Enterprises in Vietnam

Huong Thi Trinh, Makoto Kakinaka, Donghun Kim & Tae Yong Jung

To cite this article: Huong Thi Trinh, Makoto Kakinaka, Donghun Kim & Tae Yong Jung (2017):
Capital Structure and Investment Financing of Small and Medium-Sized Enterprises in Vietnam,
Global Economic Review, DOI: [10.1080/1226508X.2017.1340184](https://doi.org/10.1080/1226508X.2017.1340184)

To link to this article: <http://dx.doi.org/10.1080/1226508X.2017.1340184>

【Updated on May 12, 2025】 Integration of CiNii Dissertations and CiNii Books into CiNii Research
Trial version of CiNii Research Knowledge Graph Search feature is available on CiNii Labs
【Updated on June 30, 2025】 Suspension and deletion of data provided by Nikkei BP
Regarding the recording of “Research Data” and “Evidence Data”



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General Information Sources

•Newspapers, Trade Magazines, Websites (.com):

- May provide useful info but **not reliable for research or scholarly papers**
- Trade magazines lack sufficient scientific/technical detail and may promote biased viewpoints
- **Newspapers** prioritize reader interest, not depth; may contain commercial bias
- Websites (.com) may have commercial bias, need verification for technical validity
- Company websites may offer valuable info but should be evaluated for bias

•Wikipedia:

- Good for general, preliminary information
- Open to edits, **not a reliable academic source**
- **Do not cite Wikipedia in scholarly work**



Wikipedia
<https://www.wikipedia.org>

Wikipedia

Wikipedia is a free online encyclopedia, created and edited by volunteers around the world and hosted by the Wikimedia Foundation.

English Language

English is a member of the Indo-European language family, belonging to the West ...

Wikipedia

アンネ・フランク (独: Annelies Marie Frank、1929年6月12日 - 1945年3月 ...

Wikipedia, L'enciclopedia Libera

Wikipedia non dà garanzie sulla validità dei contenuti Il progetto è ospitato ...

United States

The United States of America (USA), also known as the United States (U.S.) or ...

Alien

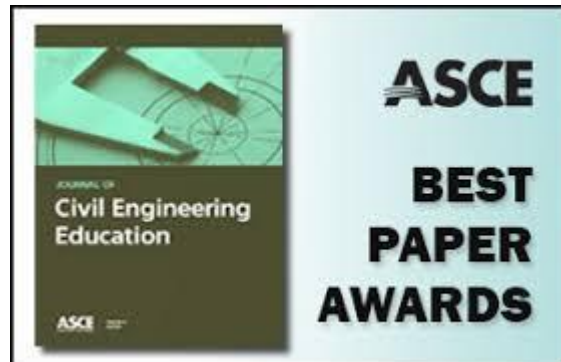
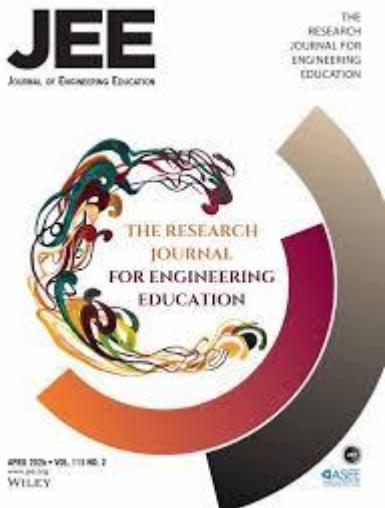
Alien is an American science fiction horror and action media franchise ...

India

India, officially the Republic of India, [j][20] is a country in South Asia. It is ...

Scholarly Publications

- Target sources: papers published in refereed scholarly journals and conferences
- Identifying scholarly journals:
 - Many have "**Journal of...**" or "**... Journal**" in the title
 - Some **reputable journals** don't include "journal" in the title (e.g., *Computers and Operations Research*, *Advanced Materials*, *Research in Engineering Design*)



Importance of Literature Search and Review in Research

Key Benefits

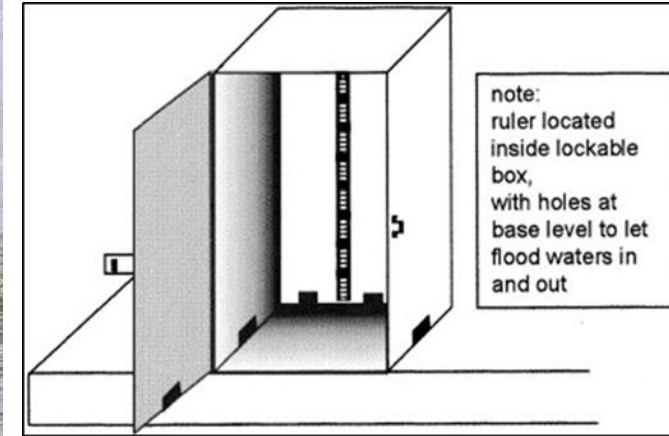
-  **Connects Research** to existing knowledge
-  **Demonstrates Understanding** of field
-  **Provides Context** for your study

Critical Purposes

- 1 **Academic Foundation** – Builds on prior work
- 2 **Clarifies Ideas** – Refines research focus
- 3 **Evaluates Methods** – Assesses data collection techniques
- 4 **Reveals Analysis Techniques** – Identifies potential findings
- 5 **Anticipates Challenges** – Highlights research gaps

Impact on Research

-  **Informs methodology selection**
-  **Guides interpretation of results**



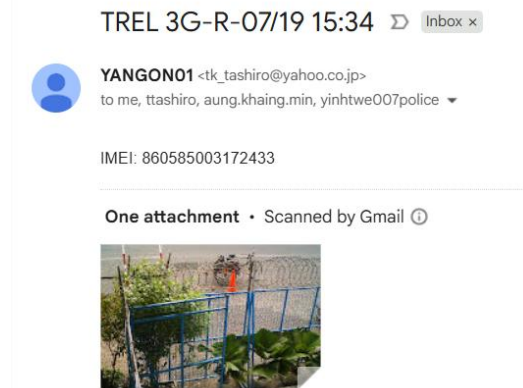
Chalk gauge



HOBO U20L Water Level Logger



TREL 3G-R (Camera)



Building on Existing Research: Importance of Literature Review

- ✓ ~90% of ideas build on prior work (few are 100% novel).
- ✓ Innovation often comes from recombining or refining existing knowledge.
- ✓ Ignoring past studies risks redundancy or missed opportunities.
- ✓ Audit your literature review: Are you standing on **giants'** shoulders?

Paper	Main point	Method	Research gap	Others
(1)				
(2)				
(3)				



ပြန်တော့မကြည့်ဘူး အမြဲတမ်းတော့ ရို- က် ဖြစ်တယ်



Research Methodology

The methodology is **different** depending on your **field of study, topic, research question**

Previous studies / Textbooks



Describe a suitable methodology / method

Research Methodology



Research Methodology in Engineering

Definition

- Systematic approach to solving research problems
- Guides data collection, analysis, and interpretation
- Combines philosophy, design, and techniques

Key Components

1. **Research Approach** (Qualitative/Quantitative/Mixed)
2. **Data Collection Methods** (Simulations, Sensors, Surveys, etc.)
3. **Analysis & Interpretation** (Statistical, Computational, Thematic)



Qualitative Research Approach

Purpose

Explores subjective meanings, behaviors, and experiences

Key Focus Areas

- Human perceptions & attitudes
- Social & environmental interactions
- Contextual understanding of challenges



Quantitative Research in Engineering

Key Characteristics

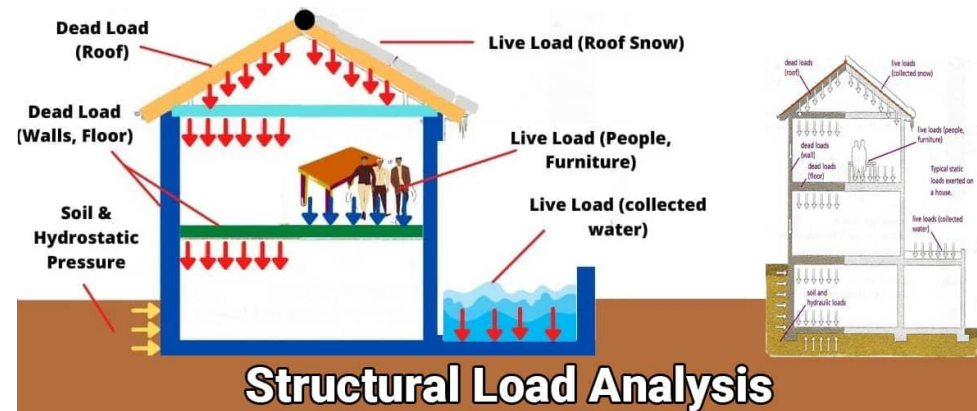
 **Objective Analysis** – Tests theories using measurable data

 **Structured Methods** – Experiments, surveys, simulations

 **Statistical Tools** – Descriptive & inferential analysis

Common Engineering Applications

- Material strength testing
- Structural load simulations
- Energy efficiency metrics



A research project that used questionnaires

Study Reference

- A local level relationship between floods and poverty: A case in Myanmar
- Authors: Akira Kawasaki, Genki Kawamura, Win Win Zin

Study Area-Bago

Data Collection (Questionnaires)

- Door-to-door household surveys
- Collected data on:
 - Flood characteristics (duration, depth, damage)
 - Demographics (age, gender, income)
 - Vulnerability (health, disaster preparedness)
 - Poverty indicators (income, education, household size)

Key Findings

- Poor households often live in **flood-prone areas**
- Fragile housing increases flood impact
- Flooding contributes to a **cycle of poverty**

Role of Questionnaires

- Enabled data collection from a **large sample**
- Provided measurable indicators of **poverty and vulnerability**



Case Study

•**Purpose:** In-depth investigation of specific conditions/factors

•**Key Features:**

- Examines success/failure causes
- Provides detailed analysis of real-world scenarios

➤ **Inundation Management in Urban Drainage Area with Combined Sewer System: A case study in Downtown Area of Tsushima City, Japan (Master Thesis); Aung Khaing Min**

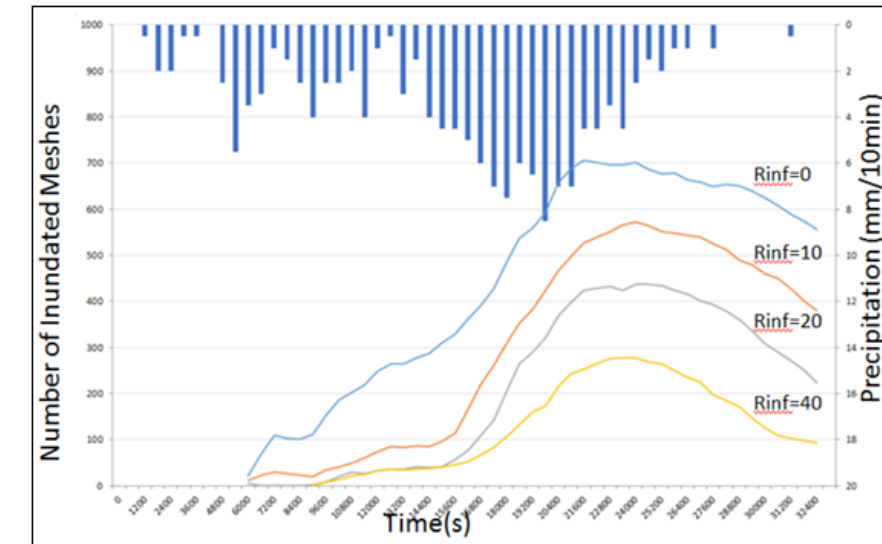
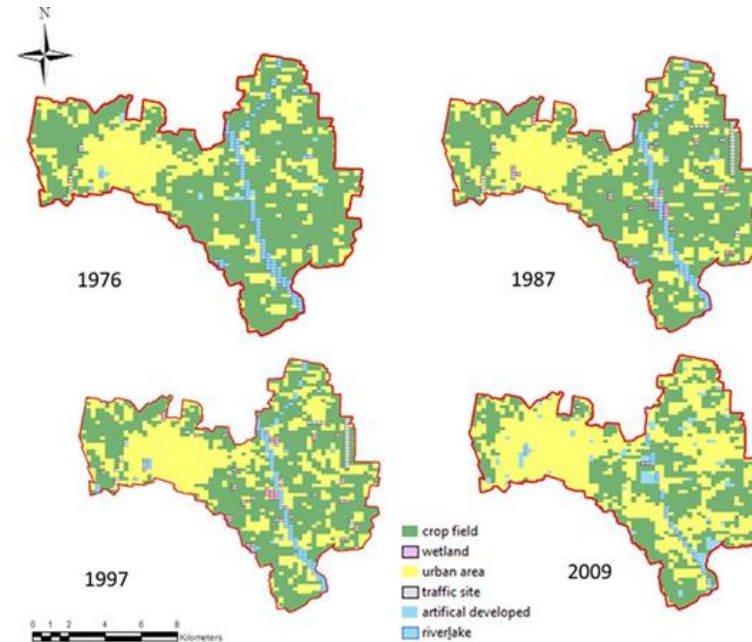
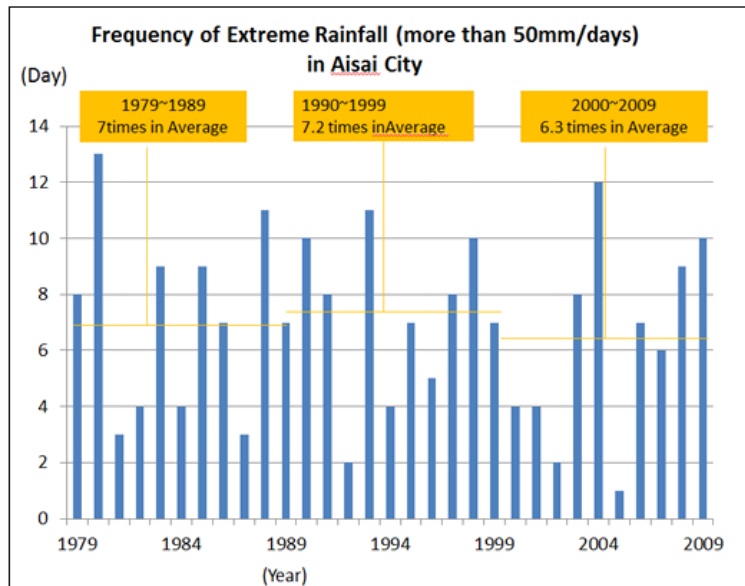


Fig-.Frequency of Extreme Rainfall data in Aisai city Fig- the different land uses in the study area

Fig - urban flood by changing infiltration parameter

Analysis of Driving Stress on Various Roadway Conditions in Myanmar by using Heart Rate Variability

Phyu Phyu THWE ^{a*}, Toshiyuki YAMAMOTO ^b, Hitomi SATO ^c, Takayuki MORIKAWA ^d



(a)Polar watch V800 (b) Heart rate sensor H7
Figure : Sensors used in this study

Overview & Methodology

- **Goal:** Identify high-stress roadway locations in Yangon, Myanmar, to guide targeted traffic safety interventions.
- **Subjects:** 42 professional drivers (41 male, 1 female; age 24–64).
- **Setup:** Polar V800 watch, H7 chest strap, GPS, and video camera across 3 diverse routes.
- **Analysis:** Time- & frequency-domain HRV parameters evaluated with the Wilcoxon signed-rank test against a 10-minute baseline.

Key Findings

- **Top Stress Factors:** Mixed/confusing traffic, jaywalking pedestrians, sharp turns, sudden lane changes, rough pavement, and flyover construction areas.
- **Route Contrast:** Routes 1 & 2 caused higher stress than Route 3 (CBD). CBD stress was lower partly due to the absence of slow-moving vehicles and motorcycles.

Expected Results

Expected Results (Based on Literature Review)

- Predict outcomes grounded in **previous studies**
- Define **tangible outputs**:
 - Prototype, concept, solution
 - Guidelines, strategies, tools
- Ensure results are **evidence-based, quantifiable, and usable**



Expected Results

What outcomes will be derived from achieving the objectives of your research

- What original contribution your research will make
- How it will contribute to and enrich the existing academic knowledge
- How it will contribute to the particular issues in your particular subject area

Study Plan for Master Student in Japan

No	Activity	First Year		Second Year	
		First Semester	Second Semester	Third Semester	Fourth Semester
1	Cultural Orientation				
2	Lab Orientation				
3	Japanese Language Courses				
4	Core Engineering Classes				
5	Academic Seminars				
6	Literature Review				
7	Research Project				
8	Data Collection				
9	Data Analysis				
10	Thesis Writing				
11	Final Presentation				

Bibliography

Importance of Citing References:

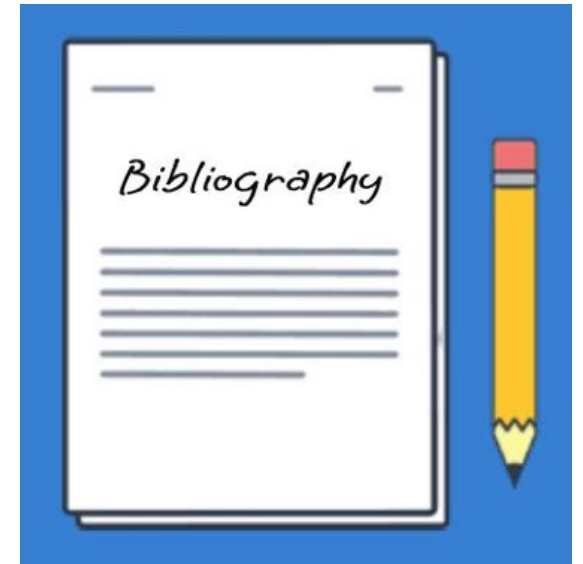
- **Reviewers check bibliography** to assess research quality
- High-quality citations indicate **thorough research** and **academic diligence**

Citation Style:

- Use **APA standard** (or supervisor's preferred format)
- Correct citation format:
 - Family name, Year, Title, City, etc.
- **Follow citation rules** to maintain consistency and accuracy

Final Tip:

- Proper citation = **demonstrates motivation and thorough reading**
- Ensure you follow the correct format to avoid errors and inconsistencies



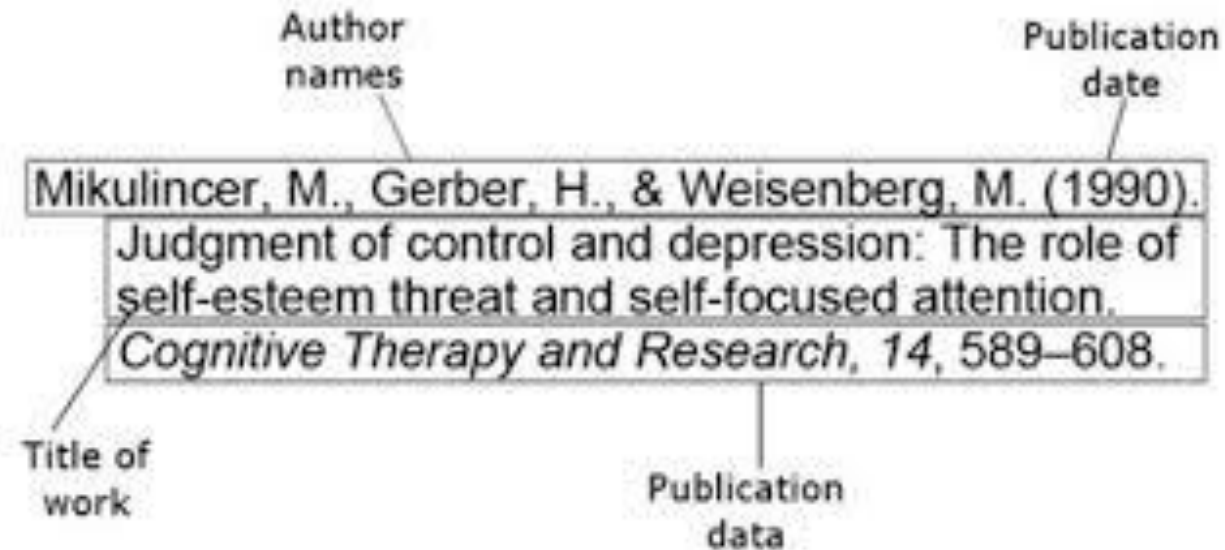
Avoiding Plagiarism in Research

Proper Citation Methods

1. **In-Text Citations:** (Author, Year)

2. **Reference List:** Full source details

3. **Quotation Marks:** For verbatim text



What is a Citation?

📌 *Two Components:*

2.Reference list: Full source details

Source Type	Required Information
Book	Author, Year, Title, Publisher, Edition
Journal Article	Author, Year, Title, Journal, Volume, Pages
Conference Paper	Author, Year, Title, Conference, DOI

- ✓ Avoids plagiarism
- ✓ Supports arguments with evidence
- ✓ Guides readers to original sources



Use of Generative AI in Applications

⚠ Important Notice

• **Generative AI (e.g., ChatGPT) must not be used** to create:

- Application Forms
- Research Plans
- Research Papers

Consequences:

- ✗ Application rejection
- ✗ Termination of training (if discovered later)
- ✗ **Future ban** from LCDP programme



Source- Long Term Capacity Development Program for Myanmar Private Sector (LCDP) JFY 2026

Japanese Universities use AI checker for plagiarism



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4. References

- (Sokout, 2020)
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- (Ito, n.d.) <https://www.kic.ac.jp/eng/profiles/profile-ito.html>
- (Petrini & Pozzebon, 2009)
https://www.researchgate.net/publication/223235893_Managing_Sustainability_with_the_Support_of_Business_Intelligence_Integrating_Socio-environmental_Indicators_and_Organisational_Context
- (Sezer, Gudelek, & Ozbayoglu, 2020)
https://www.researchgate.net/publication/339357269_Financial_time_series_forecasting_with_deep_learning_A_systematic_literature_review_2005-2019
- (Bank for International Settlements, 2022) <https://www.bis.org/ifc/publ/ifcb57.pdf>
- (Rasmussen, Y.Chen, & Bansal, 2009)
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Learning Analytics: Analyzing Various Aspects of Learners' Performance in Blended Courses. The Case of Kabul Polytechnic University, Afghanistan

ARTICLE

Hamidullah Sokout, Tsuyoshi Usagawa, Kumamoto University ; Sohail Mukhtar, Kabul Polytechnic University

IJET Volume 15, Number 12, Jun 26, 2020 ISSN 1863-0383 Publisher: International Journal of Emerging Technology in Learning, Kassel, Germany

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Abstract

Learning performance is crucial in students' academic lives because it opens opportunities for future professional development. However, conventional educational practices do not provide all the necessary skills for university instructors and students to succeed in today's educational context. In addition, due to poor information resources, ineffective ICT tool utilization and the teaching methodologies in developing countries, particularly Afghanistan, a large gap exists across curriculum plans and instructor practices. Learning analytics, as a new educational instrument, has made it possible for higher education actors to reshape the educational environment to be more effective and consistent. In this study, we analyzed multiple research approaches and the results of analytics of various learner aspects to address the aforementioned issues. The research methods were predominantly quantitative-cum-qualitative. Real (quantitative) data were collected based on learners' explicit actions, such as completing assignments and taking exams, and implicit actions, such as interacting and posting on discussion forums. Meanwhile, secondary (qualitative) data collection was conducted on-site at Kabul Polytechnic University (KPU); both blended and traditional class samples were included. The results of this study offer insight into various aspects of learners' behaviors that lead to their success and indicate the best analytical model/s to provide the highest prediction accuracy. Furthermore, the results of this study could help educational organizations adopt learning analytics to conduct early assessments to evaluate the quality of teaching and learning and improve learners' performance.

Citation

Sokout, H., Usagawa, T. & Mukhtar, S. (2020). Learning Analytics: Analyzing Various Aspects of Learners' Performance in Blended Courses. The Case of Kabul Polytechnic University, Afghanistan. *International Journal of Emerging Technologies in Learning (IJET)*, 15(12), 168-190. Kassel, Germany: International Journal of Emerging Technology in Learning. Retrieved December 9, 2024 from <https://www.learntechlib.org/p/217539/>.

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Abstract

Learning performance is crucial in students' academic lives because it opens opportunities for future professional development. However, conventional educational practices do not provide all the necessary skills for university instructors and students to succeed in today's educational context. In addition, due to poor information resources, ineffective ICT tool utilization and the teaching methodologies in developing countries, particularly Afghanistan, a large gap exists across curriculum plans and instructor practices. Learning

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Assessment of pluvial flood events based on monitoring and modeling of an old urban storm drainage in the city center of Yangon, Myanmar

April 2024 · [Natural Hazards](#) 120(9)
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 Aung Khaing Min ·  Takashi Tashiro

... Poor drainage infrastructure or ineffective drainage design are also factors that can cause floods when it rains. Clogged or poorly maintained drainage channels can result in water not being able to flow smoothly, causing waterlogging and increasing the risk of flooding (Min & Tashiro, 2024). Drainage channels often experience ineffectiveness due to garbage accumulation and sedimentation. ...

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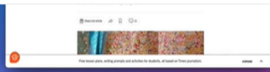
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Parentetical (Min & Tashiro, 2024)

Narrative Min and Tashiro (2024)

Where to Start Your Research Proposal?

➤ Review Institutional Guidelines

- 📄 Study **research proposal requirements** early
- ✅ Understand **expectations** to ensure success

LCDP's research plan requirements



Write a brief research plan of your proposed Master's or Ph.D. thesis **no more than 700 words (minimum 3 pages, except references).**

Below is an example of the structure of the research plan. Usage of this structure is not essential but strongly recommended.

(a) **TITLE** of your Master's or Ph.D. thesis

(b) **INTRODUCTION** (1 paragraph):

To state clearly what your research interests are. Necessary to include the followings:

- Background information regarding the selected topic and your involvement (e.g. what is the main reason that you chose the topic, your relevant working experience, etc.)
- The main objective of your study

(c) **MAIN BODY** (approximately 3 paragraphs):

To provide specific information to support your ideas. To explain what you are going to study and how the research is conducted.

Necessary to include the followings:

- Brief explanation for your analysis of this topic.
- Brief explanation for your research methodology.

(d) **CONCLUSION** (1 paragraph):

To stress the most important point(s) of your research plan, and your future work. Necessary to include the followings:

- The skills which you wish to obtain in Japan.
- How you intend to utilize your research to solve the issue(s) mentioned in the first part of the plan after returning to your home country.

A

Evaluation of Pluvial Flood Events Using Monitoring and Modeling of an Aged Urban Storm Drainage System

INTRODUCTION

B

Urban pluvial flooding has become one of the most significant natural hazards affecting cities worldwide due to rapid urbanization, aging drainage infrastructure, and the increasing frequency of extreme rainfall events associated with climate change. Unlike river flooding, pluvial flooding occurs when intense rainfall exceeds the capacity of urban drainage systems, causing water to accumulate on streets, residential areas, and public facilities. Many cities in developing countries are particularly vulnerable because their storm drainage systems were designed decades ago using outdated rainfall statistics and have deteriorated due to aging, insufficient maintenance, sediment accumulation, and uncontrolled urban expansion. Consequently, even short-duration, high-intensity rainfall can lead to severe inundation, resulting in economic losses, traffic disruption, environmental degradation, and threats to human safety.



My interest in this research originates from more than twelve years of professional experience in the water and wastewater sector under Myanmar's Ministry of Construction, where I was involved in urban drainage planning, flood mitigation, and infrastructure development. Through field investigations and engineering practice, I observed that sediment accumulation, aging drainage facilities, and inadequate maintenance significantly reduce drainage performance. These experiences motivated me to investigate the hydraulic behavior of aging storm drainage systems using advanced monitoring technologies and numerical models. The main objective of this research is to develop an integrated framework for evaluating pluvial flood events by combining continuous hydrological monitoring, hydraulic modeling, and flood risk analysis to improve the resilience of urban drainage systems.

Research Background and Problem Analysis

C

Urban drainage systems are essential infrastructures designed to convey stormwater safely during rainfall events. However, many existing drainage networks were constructed several decades ago based on historical rainfall records that no longer represent current climate conditions. In addition, sediment deposition, structural deterioration, illegal connections, insufficient maintenance, and urban expansion have significantly reduced drainage capacity. These factors increase the likelihood of drainage surcharge and surface flooding during heavy rainfall.

EPA SWMM, and other integrated urban drainage models have become powerful tools for simulating urban flooding, their prediction accuracy strongly depends on the availability of high-quality monitoring data. Unfortunately, continuous measurements of rainfall, water level, and flow within urban drainage systems are scarce in many developing countries. As a result, uncertainties remain in estimating flood extent, flood depth, and flood duration.

This research aims to address these limitations by integrating field monitoring with hydraulic modeling. Water-level loggers and automatic rain gauges will be installed at representative locations within the study area to collect continuous observations during rainfall events. These monitoring data will be used to calibrate and validate the hydraulic model, improving its reliability. Furthermore, Geographic Information System (GIS) analysis will be employed to identify flood-prone areas and evaluate the spatial distribution of flood hazards. By combining monitoring and modeling, this study will provide a more accurate representation of pluvial flood processes than conventional approaches based solely on simulations.

Research Methodology

The proposed research consists of five major stages.

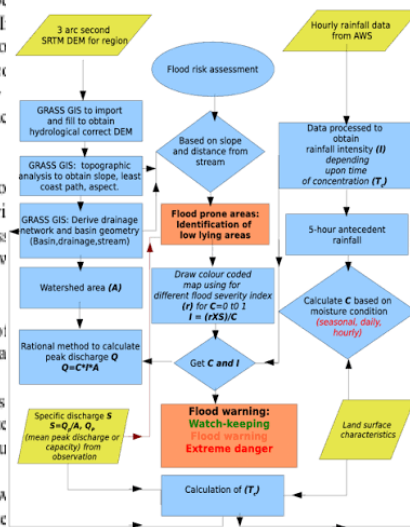
The first stage involves data collection and field investigation. Existing storm drainage networks will be surveyed to obtain information on pipe dimensions, manholes, drainage channels, outlet structures, and surrounding land use. High-resolution Digital Elevation Models (DEMs), land-use maps, rainfall records, drainage network data, and historical flood information will also be collected. Continuous rainfall observations will be obtained using automatic rain gauges, while water-level loggers will be installed inside selected manholes and open channels to monitor drainage system responses during storm events.

The second stage focuses on hydraulic model construction. A two-dimensional surface flow drainage model will be constructed using I pipes, manholes, junctions, culverts, and represented using rainfall-runoff models or storage. A two-dimensional surface flow drainage network to simulate the interaction during inundation.

The third stage involves model calibration. Rainfall gauges and water-level loggers with parameters, including Manning's roughness coefficient, losses, will be adjusted until simulated results match observations.

The fourth stage evaluates the influence of different scenarios. Different scenarios will be simulated to examine pipe capacity, drainage blockage, and Sensitivity analysis will identify the factors influencing future rainfall scenarios based on climate change resilience of the existing drainage system.

Finally, flood hazard and flood risk maps will be generated, showing flood duration, flood velocity, and flood extent.



integrated with socio-economic information, including critical infrastructure, to identify high-risk areas. The research will also involve planning and prioritizing drainage improvement projects.

Expected Outcomes and Significance

The expected outcome of this research is the development of an integrated methodology for evaluating pluvial flood events using both field monitoring and hydraulic modeling. Unlike conventional studies that rely primarily on numerical simulations, this research combines continuous observations with advanced urban drainage models to improve prediction accuracy. The calibrated hydraulic model will provide reliable estimates of flood depth, flood duration, and inundation extent under different rainfall scenarios.

Another important outcome is the evaluation of the hydraulic performance of aging storm drainage systems. By quantifying the impacts of sediment deposition, structural deterioration, and increased rainfall intensity, the research will identify critical weaknesses within the drainage network and provide practical recommendations for rehabilitation and maintenance.

The research is expected to contribute scientifically by improving the integration of monitoring technologies, hydraulic modeling, and GIS-based flood risk assessment. It also supports the development of sustainable urban drainage management strategies that enhance climate resilience and reduce future flood damage.

CONCLUSION

D

This research proposes an integrated approach for evaluating pluvial flood events through continuous hydrological monitoring and hydraulic modeling of an aged urban storm drainage system. By combining field observations with advanced numerical simulations, the study aims to improve the understanding of urban flood processes and provide more reliable tools for flood prediction and risk assessment. The research will identify the major factors contributing to pluvial flooding, evaluate the performance of aging drainage infrastructure, and develop practical strategies for reducing urban flood risks under current and future climate conditions.

Through graduate study in Japan, I hope to acquire advanced knowledge and practical skills in urban hydrology, hydraulic modeling, GIS-based flood risk analysis, Internet of Things (IoT)-based monitoring systems, and climate change impact assessment. Learning from Japan's extensive experience in urban flood management and resilient infrastructure will strengthen my research and technical capabilities.

After returning to Myanmar, I intend to apply the knowledge and skills gained through this research to improve urban stormwater management, support evidence-based drainage planning, and develop flood forecasting and early warning systems for vulnerable cities. I also plan to collaborate with government agencies, universities, and engineering organizations to promote modern urban flood management practices and contribute to the development of climate-resilient cities. The proposed research will therefore provide both scientific contributions and practical solutions for reducing the impacts of pluvial flooding in Myanmar and other developing countries.

No	Activity	First Year				Second Year			
		First Semester	Second Semester	Third Semester	Fourth Semester	First Semester	Second Semester	Third Semester	Fourth Semester
1	Cultural Orientation								
2	ab Orientation								
3	Japanese Language Courses								
4	Core Engineering Classes								
5	Academic Seminars								
6	Literature Review								
7	Research Project								
8	Data Collection								
9	Data Analysis								
10	Thesis Writing								
11	Final Presentation								

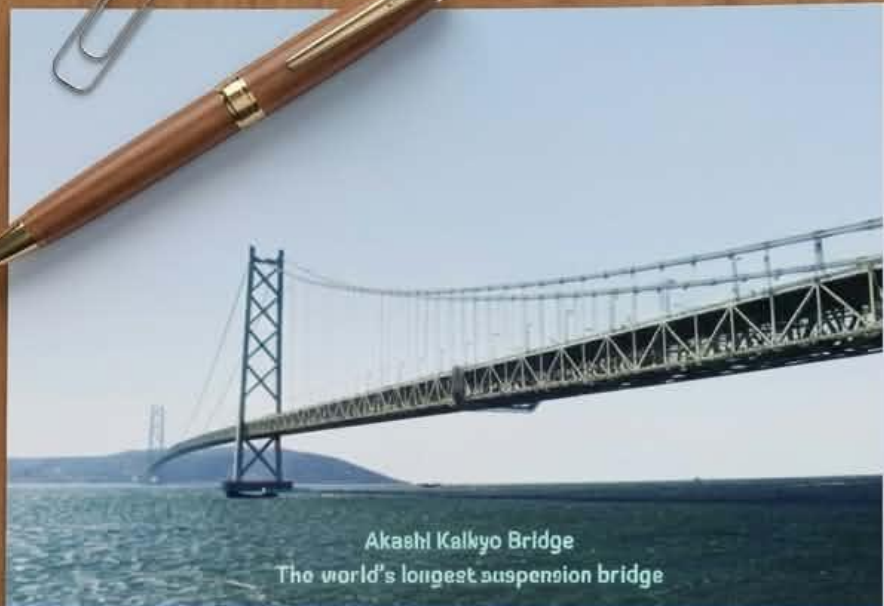
Effective placement of headers and figures will guide reviewers' eyes in capturing your story!!!

Obtain Third Person's View via Feedback

- Check to see how much of your proposal is understood by others



- Have others check your document to avoid your story becoming ego-centric



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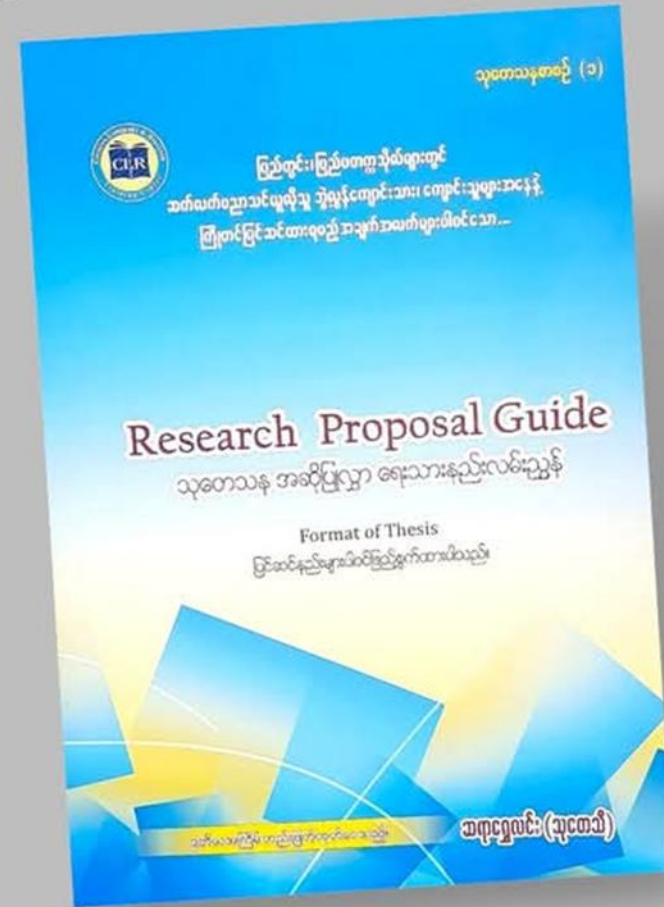
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- Shady Attia; Writing a Research Proposal
- Writing a Research Proposal: A guide for Science and Engineering students; The University of Melbourne

The Role of AI in Scientific Research

- GPT-4 (OpenAI, 2023) sparked global scientific discourse

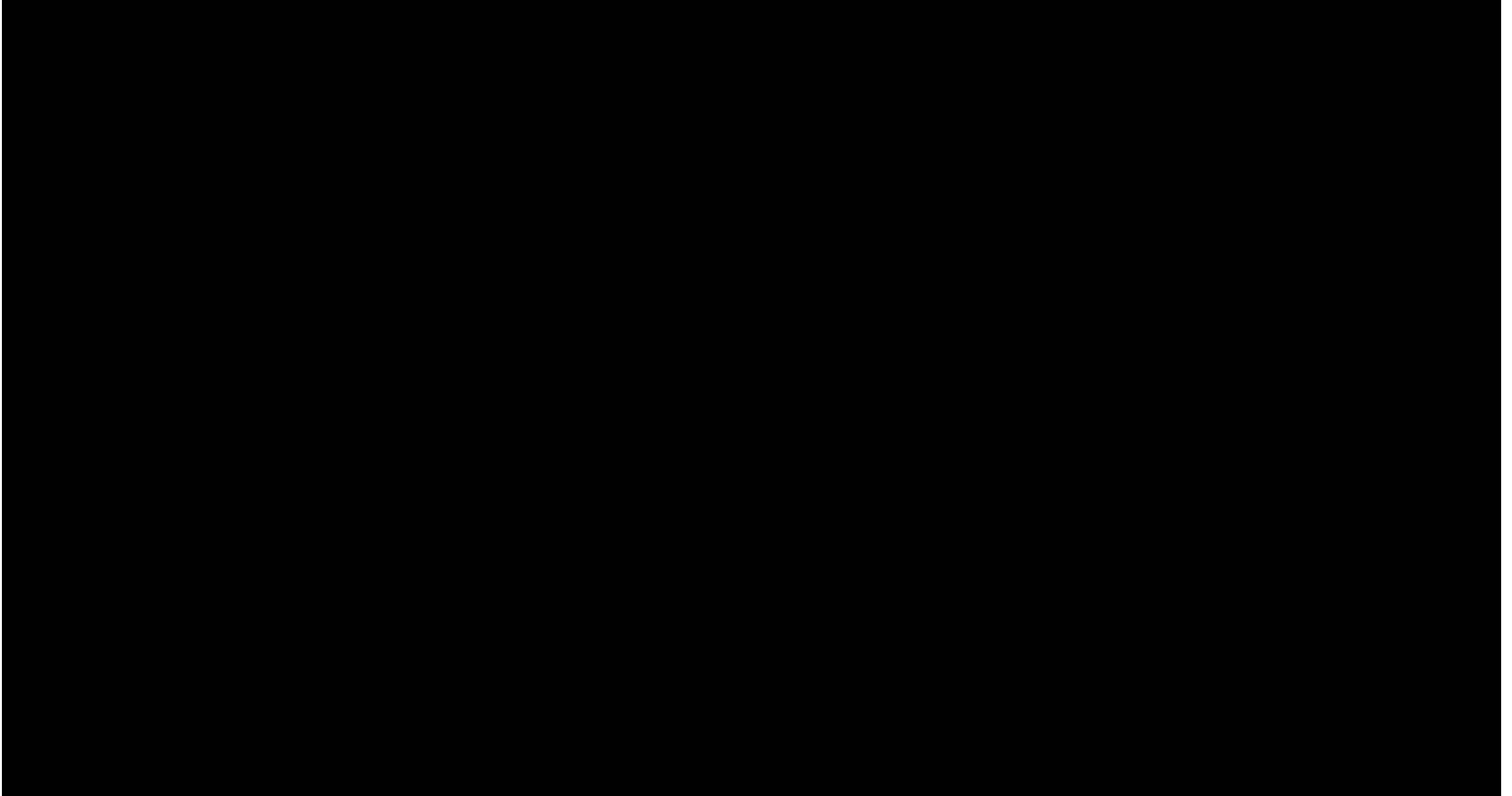
AI Applications in Research:

- 1.Literature Review:
- 2.ChatGPT as a Brainstorming Partner for Research Ideas
- 3.Interpreting Figures & Correlating to Conclusions
- 4.The Research Proposal Development Process



Fig.1 **Generative pre-trained transformers** (GPTs), show tremendous potential in helping researchers tackle their daily tasks and challenges

Evaluation of Research Papers Using ChatGPT



ChatGPT ▾

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Assessment_of_pluvial_flood_events_b... PDF

summarize the key points of this article in bullet points. Tell me the key findings, methods (how authors obtained their results), implications, and the novelty and significance of this study.

ChatGPT ▾

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 **Key Findings**

- **Pluvial flooding** in central Yangon is mainly driven by **drainage system failures**—especially due to **solid waste and sediment blockage**, and **river water level variation**—more than by heavy rainfall alone.
- Even **low-intensity rainfall** events can lead to flooding when **sluice gates** (used to prevent tidal backflow) are closed.
- The **frequency and severity** of flooding are exacerbated by Yangon's outdated, gravity-based open drainage system, and insufficient maintenance.

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 **Methods**

- **Monitoring:**
 - Installed **8 water-depth loggers** in storm drains and on the Yangon River.
 - Deployed a **tipping-bucket rain gauge** for precise rainfall data.
 - Logged data during the 2019 monsoon season (~200 days).
- **Modeling:**
 - Developed a **1D–2D coupled hydrodynamic model** using **InfoWorks ICM**.
 - Incorporated terrain, channel, and rainfall data.
 - Simulated 9 selected flood events from the 12 observed.
 - Used **manual gate operation and tide data** to model sluice gate behavior.

 **Novelty and Significance**

- This study is **one of the first** in a developing country to use **continuous water-level monitoring** and **simulation modeling** together to assess urban pluvial flooding.
- Addresses the **gap in data availability and modeling** capabilities in Southeast Asia, particularly in older urban areas.
- Demonstrates that **integrated monitoring + modeling** is more effective than traditional approaches (e.g., interviews, post-event surveys).

Interpreting Figures & Correlating to Conclusions

Challenges with Figures in Research Papers

- Often "stand-alone" (hard to understand without text)
- Overuse of **symbols/abbreviations without clear captions**
- Critical data trends may be missed by speed readers

Solution: AI-Assisted Figure Analysis

- ChatGPT / Bing AI** can analyze figures **in context**, even if poorly labeled
- Extracts key trends, data points, and correlations **beyond caption text**

Key Benefit

- Saves time**—avoids deep-text reading for figure interpretation
- Encourages authors to make figures **self-explanatory**

AI-Powered Interpretation

Electronic Supplementary Information (ESI)

Consumer-grade polyurethane foam functions as a large and selective absorption sink for bisphenol A in aqueous media

Jie Han,^{a,†} Wei Qiu,^a Saumya Tiwari,^b Rohit Bhargava,^b Wei Gao,^c and Baoshan Xing^{a,†}

^a Stockbridge School of Agriculture, University of Massachusetts, Amherst, Massachusetts 01003, United States.

^b Department of Bioengineering and Beckman Institute for Advanced Science and Technology, University of Illinois at Urbana-Champaign, Urbana, Illinois 61801, United States.

^c Department of Chemical and Materials Engineering, The University of Auckland, Auckland 1010, New Zealand.

18 pages, excluding cover page.

11 figures

5 tables

Submitted to *Journal of Materials Chemistry A*

[†]Corresponding authors. Jie Han, jiehan@umass.edu; Baoshan Xing, bx@umass.edu.

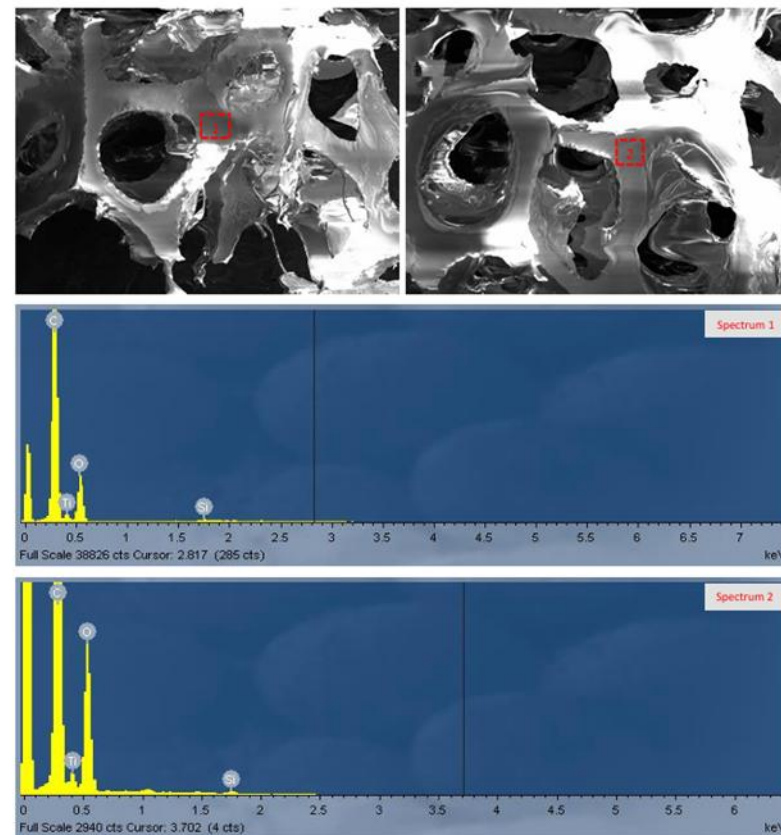


Figure S1. Scanning electron microscope (SEM) images and energy dispersive X-ray spectra (EDS) of a pristine specimen of the reference PUF. Analyses were performed on a FEI Magellan 400 High-Resolution Scanning Electron Microscope. EDS spectra were acquired under 5.0 kV acceleration voltage and 6.4 nA current from user-selected regions on SEM images of PUF fibrils under 500x magnification. The small amount of Ti detected was likely to be from the titanium oxide pigments dosed into the material during the manufacturing process. The trace amount of silicone (Si) was likely due to contamination by air dusts during the sample preparation and handling.



Consumer_grade_polyurethane_foam_...
PDF

Tell me in detail what Figure
S1 shows and proves in this paper.

Figure S1 in the paper titled "*Consumer-grade polyurethane foam functions as a large and selective absorption sink for bisphenol A in aqueous media*" presents **Scanning Electron Microscope (SEM) images** and **Energy Dispersive X-ray Spectra (EDS)** of a pristine (unmodified) polyurethane foam (PUF) sample.

What Figure S1 Shows:

1. SEM Images:

- High-resolution micrographs of the **PUF fibrils** at 500× magnification.
- Provide visual details on the **microstructure** of the reference polyurethane foam.

2. EDS Spectra (Spectrum 1 and Spectrum 2):

- Show the **elemental composition** of the selected areas on the SEM images.
- Were taken using a **5.0 kV acceleration voltage** and **6.4 nA current**, suitable for surface analysis.

Key Findings from Figure S1:

- **Main Components:**
 - The **primary elements** detected were consistent with the base chemical composition of polyurethane: **carbon (C)**, **oxygen (O)**, and **nitrogen (N)**—reflecting the organic nature of the material.
- **Minor Components:**
 - A **small amount of titanium (Ti)** was detected.
 - Likely originated from **titanium dioxide (TiO₂) pigment** added during manufacturing, which is commonly used as a whitening or coloring agent.
 - A **trace amount of silicon (Si)** was also observed.
 - Attributed to **airborne dust contamination** during sample preparation and handling rather than being part of the foam's formulation.

What It Proves:

- Confirms the **pristine chemical integrity and morphology** of the PUF before any BPA exposure.
- Establishes a **baseline for comparison** with BPA-laden foam later in the study.
- Demonstrates that the foam is **chemically stable**, with no unexpected heavy metals or interfering elements that might affect BPA sorption behavior.
- Provides evidence that **consumer-grade PUF is structurally suitable** for sorption applications due to its fibrillar and open-cell architecture.

Brainstorming with AI in Research Proposals

•AI as a brainstorming partner

- Extensive, quick searches
- Customized, concise answers

•Advantages observed

- Interactive Q&A sessions
- Provides initial research insights
- More efficient than keyword searches
- AI enhances early-stage research and idea generation
- Supports quick, informed decision-making



ChatGPT vs. Traditional Research Methods

AI-Powered Research Advantage

ChatGPT Benefits

- Tailored, concise responses
- **Faster than manual web searches**
- Curated information (vs. search result overload)
- Excellent starting point for research

Traditional Methods

- Time-consuming **keyword searches**
- **Requires filtering** irrelevant results
- Wikipedia = generic overview only

Bottom Section:

 *"In tests, ChatGPT provided more customized, actionable insights than standard web research"*



Brainstorming for Research Idea by AI

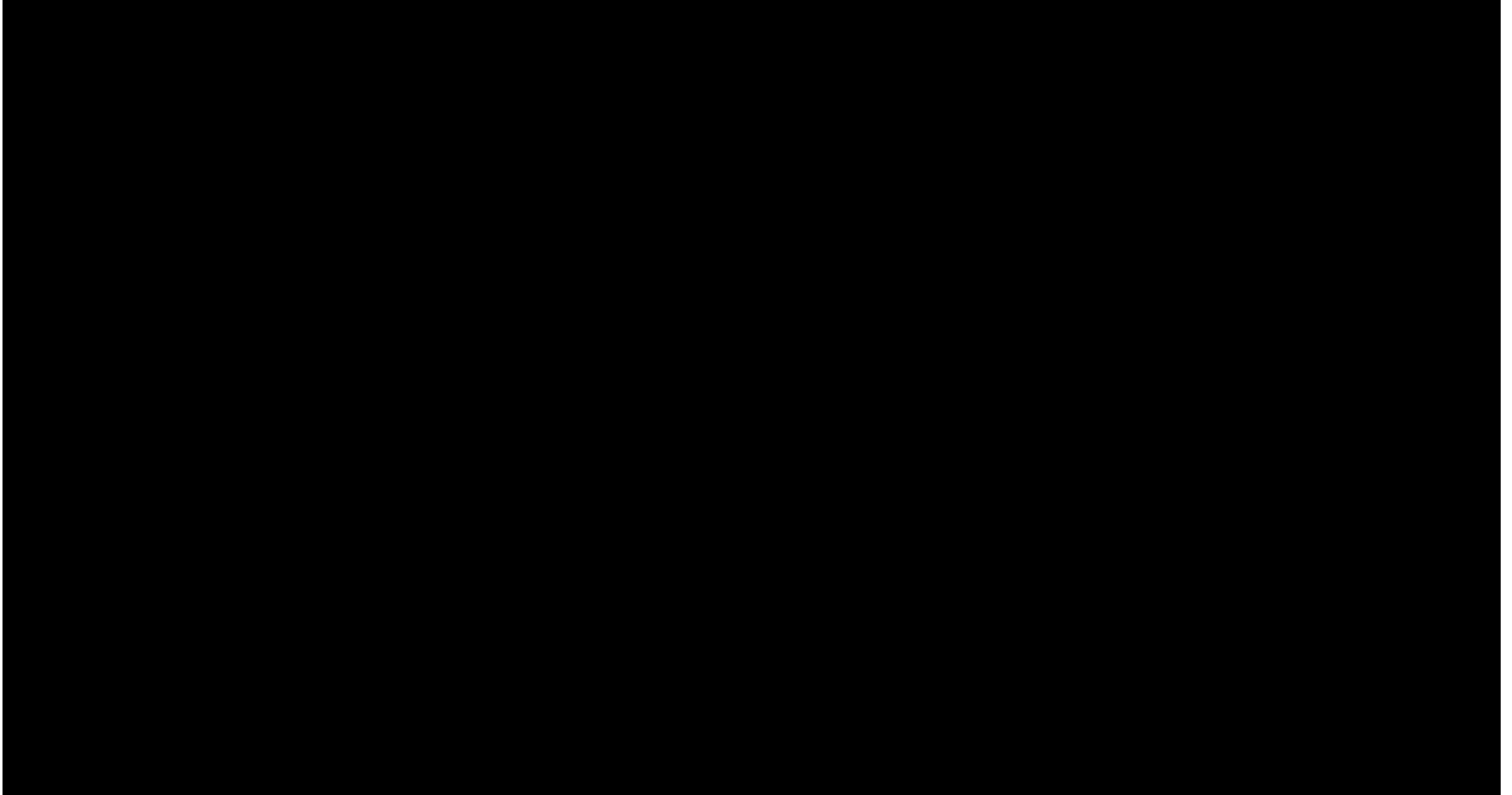


Table 39 Designing a mock research proposal over a specific topic mentioned in the previous conversation by continuing the chat session with the GPT-4 model

Prompt (continuing the chat session): Concerning Point 2 “Interactions with Pollutants”, write a research proposal with at least 3000 words.

In this proposal, address the following questions in detail and cite references to support your claims and arguments:

1. What research question you aim to address, and why it is important to the field of study?
 2. What has been done and understood in the current literature revolving around the specific research question you want to address?
 3. What research work you propose to do and what methods you are going to use to complete the work? And why do you think they are feasible?
 4. What new knowledge, insights, or understanding you anticipate to gain by completing the work described in this research proposal?
-

Response:**Research Proposal: Investigating the Interactions between Airborne Pollutants and Respiratory Allergens: Implications for Public Health****Introduction and Research Question:**

Air quality and its impact on human health have become prominent areas of study in the twenty-first century. As urban centers expand and industrial activity intensifies, the coexistence of airborne pollutants and respiratory allergens in the atmosphere is an emerging concern. This leads us to the primary research question: How do common airborne pollutants interact with respiratory allergens, and how do these interactions influence the allergenicity and dispersion of these allergens?

Addressing this question is paramount because it will aid in understanding the compounded effects of pollutants and allergens on respiratory health, a critical aspect in formulating public health guidelines and urban planning strategies.

Literature Review:

Several studies have highlighted the increasing incidence of respiratory allergic diseases worldwide, especially in urban settings.¹ This rise has been associated with a range of factors, including increased exposure to airborne allergens and pollutants.

A significant body of literature has focused on individual effects of airborne pollutants such as PM_{2.5}, NO_x, SO_x, and ozone on respiratory health.² Similarly, the impact of various allergens, from pollen to mold spores, has been well-documented.³ However, the synergistic or antagonistic interactions between these components remain less explored.

Few studies have indicated that certain pollutants can modify the protein structure of allergens, potentially enhancing their allergenicity.⁴ Conversely, some pollutants might inhibit the dispersion of allergens, creating localized ‘hotspots’ of allergen concentrations.⁵

Proposed Research:

To address the primary research question, the following objectives are laid out:

1. **Characterize the Chemical Interactions:** Understand at a molecular level how common pollutants interact with allergenic proteins. This will be done using mass spectrometry and protein conformational analysis.
2. **In Vivo Allergenicity Assays:** Using animal models, assess the allergenicity of ‘pollutant-exposed’ allergens versus ‘non-exposed’ ones. This will indicate whether exposure to pollutants increases or decreases allergenic potential.
3. **Aeroallergen Dispersion Studies:** Conduct field studies in urban settings with varying pollution levels to understand how pollutants influence allergen dispersion. Advanced aerobiological sampling equipment will be used to collect real-time data.
4. **Human Exposure Studies:** In a controlled setting, volunteers with a history of respiratory allergies will be exposed to ‘pollutant-exposed’ and ‘non-exposed’ allergens, monitoring for allergic reactions and respiratory function. This will provide direct evidence of the impact on human health.

Methodological Feasibility:

1. **Mass Spectrometry:** Modern spectrometry equipment allows for precise identification of chemical modifications in proteins. Given that allergens are proteins, any structural changes induced by pollutants can be identified using this method.
2. **Animal Models:** Rodent models with induced allergic responses are standard in allergenicity testing.⁶ These models are reliable indicators of allergenic potential.
3. **Aerobiological Sampling:** With the advent of portable and precise air sampling devices, collecting real-time aerobiological data in urban settings has become more accessible.
4. **Controlled Human Exposure:** While this requires strict ethical considerations and robust experimental controls, it provides the most direct evidence of the research question's implications on human health.

Anticipated Outcomes:

1. **Detailed Chemical Interactions:** A comprehensive understanding of how pollutants modify allergens at a molecular level.
2. **Allergenicity Modulation:** Insights into whether pollutants enhance, diminish, or have no effect on the allergenic potential of common airborne allergens.
3. **Allergen Dispersion Patterns:** Knowledge on how urban pollution patterns influence the spread and concentration of airborne allergens.
4. **Direct Health Impacts:** Evidence on how pollutant-allergen interactions impact respiratory health, critical for public health guidelines.

This research seeks to bridge a critical knowledge gap in the intertwined fields of environmental science and public health. As urban centers grapple with the dual challenges of rising pollution and increasing allergic diseases, understanding the nexus between these challenges is more crucial than ever.

References:

(Note: The above is a mock research proposal, and the references are fictional and intended for illustrative purposes only.)

- ¹ Smith, J.T., et al. (2019). "Rising Urban Allergies: A Growing Public Health Challenge."
- ² Jackson, R., et al. (2017). "Impacts of Airborne Particulates on Respiratory Health."
- ³ Wright, C.P., et al. (2018). "Aeroallergens in Urban Environments: A Comprehensive Review."
- ⁴ Mathews, L., et al. (2020). "Pollutant-Induced Protein Modifications in Allergens."
- ⁵ Roberts, A.J., et al. (2019). "Localized Allergen Hotspots in Urban Areas: A Study on the Role of Pollutants."
- ⁶ Green, M.N., et al. (2016). "Rodent Models in Allergy Research: Pros and Cons."

Subscripts and superscripts are added in the model's response for clarity.

Jie Han
Wei Qiu
Eric Lichtfouse

ChatGPT in Scientific Research and Writing

A Beginner's Guide



ChatGPT in Scientific Research and Writing: A Beginner's Guide



Abstract The developers of ChatGPT have predicted that, within the next ten years, artificial intelligence (AI) systems will exceed expert skill levels in most domains, and carry out as much productive work as one of today's largest corporations. Since the public release of ChatGPT, there has been surging interest in exploring the use of large language models, including ChatGPT, in scientific research, publication, and science communication in general. In this book, we will explore the models' capabilities, including GPT-4, GPT-3.5, and GPT-enabled new Bing (now Copilot), for carrying out the tasks through different stages of scientific research from research conceptualization, study design, to publication and science communication. We used these models for abstracting key points and extracting specific information from research publications, interpreting figures, evaluating research papers, spotting errors, responding to reviewer's comments, language editing, designing experiments, creating survey questionnaires, brainstorming, writing research proposals, and creating visuals. Major limitations of these models include hallucinations, randomness in answers when prompted by identical questions, and the lack of support for big data scrapping, processing, and visualization.

1 Introduction

The advancement of artificial intelligence technologies provides scientists with increasingly powerful and accurate research tools. On 14 March 2023, OpenAI released the GPT-4 model, the successor to ChatGPT based on GPT-3.5, which generated extensive discussions in the scientific community (Bockting et al. 2023; Owens 2023; Stokel-Walker 2023; Stokel-Walker and Van Noorden 2023). Five months later, Microsoft announced that over one billion chats and 750 million images had been generated by users within six months since their release of the new Bing (now Copilot), an artificial intelligence (AI)-enabled Internet search engine (Microsoft 2023a). While some argued that ChatGPT's benefits for scientific research are limited, academic publishers and journal editors have responded to the growing proliferation of generative artificial intelligence (AI) models in scientific research

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https://doi.org/10.1007/978-3-031-66940-8_1

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The accuracy and reliability of AI

Ask anything

+  Tools



ChatGPT can make mistakes. Check important info.

Message DeepSeek

 DeepThink (R1)

 Search



AI-generated, for reference only

Ask Gemini

+  Tools



Gemini can make mistakes, so double-check it

❖ Get the Right Recommendations

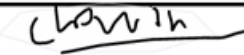


Importance of Recommendations

- Recommendations give judges a **different perspective** on your **character & achievements**
- Viewed together with your application, they create a **complete picture**
- Quality > Fame: **Who knows you best matters more than titles**
- You **can influence** what recommenders write (ethically!)

3-3. Confirmation of the nomination by the applicant's present organization

I agree to nominate this person as qualified nominees to participate in the programs on behalf of our organization.

Date	22 September 2025	Signature	
Name	U Cho Win		
Department / Division	Design		
Position	Managing Director		
TEL	Country Code +95	9 267661946	
Email	chowinmd@gmail.com		



4) Selection of the applicant: Describe the reason(s) the applicant has been selected for the said purpose, referring to the following view points; 1) Course requirement, 2) Capacity /Position, 3) Plans for the candidate after the LCDP, 4) Plan of organization and 5) Others.

The applicant is one of the Myanmar Engineering Society (MES) alumni since 2010. She has been selected as ADB scholarship as a representative of Myanmar Engineering Society student for 2018~2020 batch for ME program. Since she came back to Myanmar, even in the crisis time, she participated in the NEPS's research project as a part time researcher. Currently, she is serving as a project leader, and consultant at NEPS, where she consistently deliver high-quality training and consultations. She demonstrates obedience, professionalism, and mutual respect toward both clients and colleagues, making her a trusted representative of the organization. After completing the program, she will apply the advanced knowledge and exposure gained to upgrade NEPS's training programs and young professionals in Myanmar. She consistently performs with a customer-oriented mindset, and her work always meets organizational expectations. Her dedication, reliability, and strong interpersonal skills make her an ideal candidate for this scholarship.

2. Purpose of Application

1) Current Issues: Describe the reasons for your organization claiming the need to participate in LCDP, with reference to issues or problems to be addressed.

One of the primary goals of NEPS is to foster Myanmar people to become effective engineers who can compete in the ASEAN Engineering Community. Our programs are designed to expand participants' business toolkit, enhance productivity, and enable them to deliver greater value in their workplaces. To achieve these goals sustainably, it is essential that NEPS, as a service provider for human resource development, also strengthens its own internal capacity. This means investing in the professional development of our lecturers, who play a key role in shaping and guiding future

2) Objective: Describe what your organization intends to achieve by participating in LCDP.

By participating in LCDP, our organization expects to strengthen its human resources through advanced education and international exposure. The most valuable outcome will be having lecturers who are not only equipped with updated knowledge but also enriched with global learning experiences. In addition, establishing academic connections with International engineering organizations, universities and professors will create opportunities for collaboration beyond classroom teaching. These may include inviting guest speakers for seminars at NEPS, as well as undertaking joint research and publications on topics relevant to Myanmar firms.

3) Future Plan of Actions: Describe how your organization shall make use of the expected achievements, in addressing the said issues or problems.

NEPS plans to utilize the expected achievements from LCDP to continuously strengthen the capacity of its lecturers and, in turn, improve the quality of learning experience offered to Myanmar people. The advanced knowledge and international exposure gained will be directly integrated into our training programs, ensuring that participants are equipped with practical tools to compete in the ASEAN Engineering sector. Moreover, by leveraging academic connections with international engineering organizations, universities and professors, we intend to organize guest lectures, joint seminars, and collaborative research initiatives. Such outcomes will not only enhance the capacity of our institution but also contribute to the broader development of Myanmar local firms and business community.

Guidelines for Reference Letters – MIB Admissions

General Requirements

- No specific letter format required
- Letters used to assess experience, skills, future potential
- Choose recommenders **who know you well**

Recommender Selection

- **Letter 1:** Undergraduate supervising professor / faculty who knew you well
- **Letter 2:** Work supervisor, volunteer leader, community/project mentor
- Prefer senior or managerial-level individuals
- Aim for different perspectives (academic + professional)

Content of Strong Letters

- Personal characteristics
- Academic / work achievements
- Specific experiences observed
- Evaluation of potential for graduate study
- Clear explanation of recommender–applicant relationship
- Length of acquaintance



立教大学
RIKKYO UNIVERSITY

4: Reference letters

Your recommenders are not required to use any specifically designated forms when they write your reference letters. The letters may take any format which may suit your recommenders. Be very careful when you choose who you ask to write your letters of recommendation. These letters will be used by the committee to assess your previous experience, skills and future potentials, which means that your recommender should have adequate knowledge of you as a person and of your abilities to work and learn. Since you are required to submit two letters of reference is a good idea to ask people who can evaluate you from a different perspective to write you a reference.

The ideal recommender to write your first letter of reference would be your supervising professor or a member of faculty who knew you well when you were studying for your undergraduate or equivalent degree. For your second letter you could ask someone who knows you within a context involving your working life, volunteer activities, community or other extracurricular activities. For both letters the ideal recommender would be somebody who taught, supervised, or worked with you in a senior or managerial position.

The most helpful letters of reference are those which give information about you as an individual, your personality, previous experiences and achievements, and an evaluation of your potentials.

Recommenders must explain their relationship to you, the number of years of their acquaintance with you, and give their current position and physical addresses, email addresses and contact numbers which the selection committee can use to contact them if necessary.

Reference letters must be sent directly by the recommender to the MIB Admissions Office by email. The subject line on the email must include "MIB Reference Letter" followed by the candidate's name in full. The email address for sending reference letters is:



mib@rikkyo.ac.jp

MEXT Scholarship

JAPANESE GOVERNMENT (MEXT) SCHOLARSHIP RECOMMENDATION FORM

Applicant's Name (Please print) : _____
(Surname) , (Given name) (Middle name)

To the Applicant : Please fill in your full name above. Give this form and an envelope marked “confidential” and addressed to yourself to the person you have asked to recommend you. Ask this person to place the completed form in the envelope, seal the envelope, sign across the seal, and send it back to you. Submit the unopened envelope with your application to the Japanese Embassy/Consulate General.

To the Recommender : Please respond to the following questions. Please type or print. After completing this form, place it in the envelope provided, seal the envelope, sign across the seal, and return it to the applicant. This recommendation is a required part of the application process and to be used for admissions purposes only; prompt return to the candidate is important. MEXT appreciates your assistance and would like to assure you that your comments will be carefully considered.

Recommender's name : _____

Title and Institution : _____

Address (either work or home) : _____

Telephone: _____ / Email : _____

Telephone: _____ / Email : _____

1. During which period of time have you had the most frequent contact with the applicant? From _____ to _____.

2. What was the nature of your relationship?

3. In what areas does the applicant need improvement or growth?

4. Please comment on the applicant's interpersonal skills. How well does he or she work within a team?

5. How would you describe the applicant's leadership skills?

6. Please comment on the applicant's degree of self-confidence.

7. Please comment on the applicant's personal character.

8. Please indicate your overall evaluation of the applicant for a Japanese Government (MEXT) Scholarship.
() Strongly recommend () Recommend () Recommend with reservation

9. Please write whatever additional comments you would like to make about the applicant's potential for graduate study in Japan and potential for becoming a responsible, effective person for your country. Additional pages may be attached, and the back page of this form can also be used.

Signature _____ Date _____

Note: Any other formats of recommendation letter will be accepted.

Choosing the Right Recommenders

- Select people who can **speak meaningfully** about you:
 - **Teachers, professors, employers, coaches, activity leaders**
- Match recommender to **scholarship focus**:
 - **Academic** → **teacher/professor**
- Choose the person who **knows you best as a whole person**



Letter of Recommendation 2

(To be completed by a university instructor, employer or non-relative who knows you on a professional/academic level)

How to Request Strong Recommendation Letters

Give Ample Time & Context

- **Ask at least 3 weeks in advance**
- Explain you are applying for scholarships

The Key Question

“Do you feel comfortable writing a recommendation letter for me?”

- This allows them to **gracefully decline**
- Ensures you only get letters from **willing supporters**

Handle the Response Gracefully

- A "no" is **not a personal rejection**
- Common reasons: **lack of time or familiarity**
- **A declined request is better than a weak letter**



Make It Easy for Your Recommenders

- Provide all materials to simplify their work:

- Cover letter explaining **scholarships & goals**
- Resume with **key accomplishments**
- Completed sections of recommendation forms (if any)
- Pre-addressed, stamped envelopes or electronic submission details

- Include a **script or talking points** to highlight your strengths

- Give **clear deadlines & polite reminders**

PROFILE

Thorough and meticulous Data Analyst passionate about helping businesses succeed. Former small business owner and recipient of an MBA. Possessing strong technical skills rooted in substantial training as an engineer.

NADIA PATTERSON
Data Analyst

+123456789
xyz@gmail.com
Street number, city, state
<https://www.google.com/>

Professional Skills

- Project Management
- Accountability
- Coordinating Resources
- Information Gathering
- Critical Thinking

Technical Skills

Python	★★★★
MATLAB	★★★★
Microsoft Office	★★★★
Linux	★★★
Web Design	★★★
Java Script	★★

WORK EXPERIENCE

Dell Technologies | 2018 - Present
IT Business Operations Data Analyst

- Describe your accomplishments paragraphs can work or bullet points depending on your preferences. Make sure to state an accomplishment that demonstrates your skills in this field/position.
- Demonstrate your knowledge of the company, matching the language in your resume to the language of their posting.
- Add your text there

Pearson & Associates | 2015 - 2018
Senior Research Analyst

- Describe your accomplishments paragraphs can work or bullet points depending on your preferences. Make sure to state an accomplishment that demonstrates your skills in this field/position.
- Demonstrate your knowledge of the company, matching the language in your resume to the language of their posting.
- Add your text there

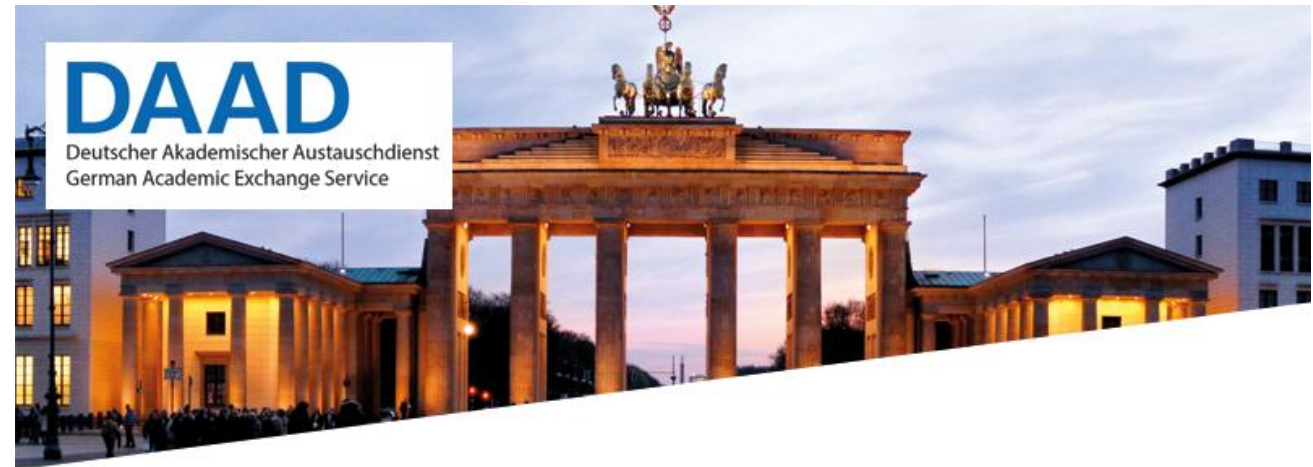
HP Technologies | 2013 - 2015
Market Research Analyst

- Describe your accomplishments paragraphs can work or bullet points depending on your preferences. Make sure to state an accomplishment that demonstrates your skills in this field/position.
- Demonstrate your knowledge of the company, matching the language in your resume to the language of their posting.
- Add your text there

EDUCATION

MBA - Concentration in Business Analytics
The University of Chicago | 2013 - 15

- Lorem Ipsum is simply dummy text of the printing & typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s.
- Add your text there



MASTER'S SCHOLARSHIPS FOR PUBLIC POLICY AND GOOD GOVERNANCE

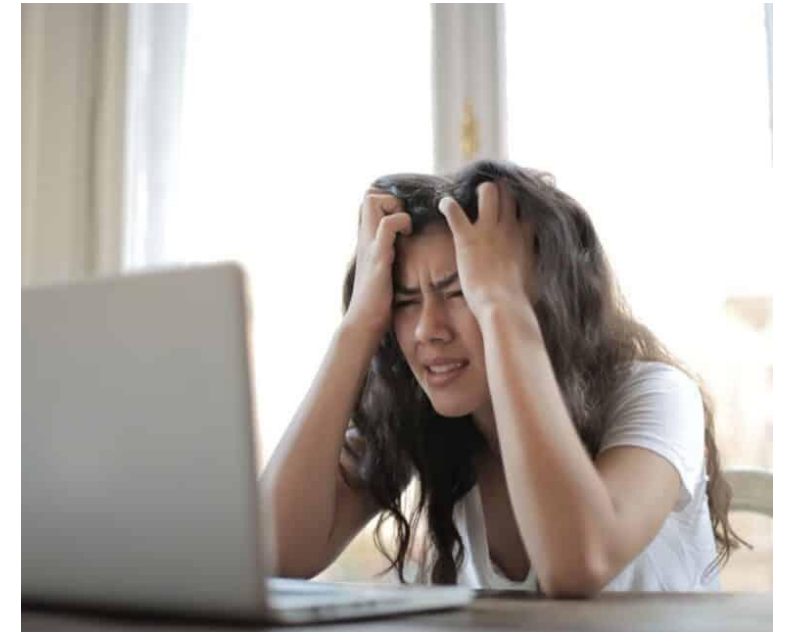
Follow Up and Show Appreciation

- Monitor progress politely: **check in a few weeks before deadlines**
- Express gratitude — a **thank you note, or small token** goes a long way
- Recommendations = **time & effort from others** → always acknowledge it



Why students fail to get overseas scholarships

- ❑ Poor university/supervisor matching
- ❑ Poor alignment with the scholarship objectives
- ❑ Poor scholarship interview performance
- ❑ Weak or unclear research proposal — especially for PhD
- ❑ The study plan is not realistic
- ❑ Weak English/language ability
- ❑ Application documents are incomplete or inconsistent





Long Term Capacity Development Program For Myanmar Private Sector (LCDP)

Long Term Capacity Development Program For Myanmar Private Sector (LCDP)

 Myanmar Japan Center
2h · 🌐

#FY2027mjclcdpscholar... See more

 JAPAN နိုင်ငံရှိ တက္ကသိုလ်များတွင် မဟာဘွဲ့ (MASTER) တက်ရောက်နိုင်မည့် ပညာသင်ဆုအခွင့်အလမ်း

FY 2027

Study in Japan

Long-term Capacity Development Program (LCDP)
for Private Sector

- Agricultural & Environment
- Economics & Regional Studies
- Engineering
- Information Technology
- Management
- Tourism

[Learn More](#)

scholarship.mjc@gmail.com



အောက်ပါ ဘာသာရပ်နယ်ပယ်များကိုလျှောက်ထားနိုင်ပါသည်။

For Master:

-  Agriculture/Environmental
-  Management (MBA)
-  Economics
-  Engineering/Information Technology
-  Tourism

For PhD:

Regional Development

□ General Information and Application form (To be announced)

ဘယ်သူတွေလျှောက်ထားနိုင်မလဲ?

□ လျှောက်ထားသူသည် အသက် ၂၂ မှ ၃၉ အတွင်းရှိ တက္ကသိုလ်တခုခုမှ ဘွဲ့ရရှိပြီး ပုဂ္ဂလိကကဏ္ဍ တွင် လုပ်ကိုင်နေသူဖြစ်ရပါမည်။ (၁၉၈၇၊ ဧပြီလ ၂ ရက်နေ့နှင့်/ နောက်ပိုင်းမွေးဖွားသူနှင့်၊ ၂၀၀၅၊ ဧပြီလ ၁ ရက်နေ့နှင့်/ မတိုင်ခင် မွေးဖွားသူ)

□ မြန်မာ-ဂျပန်စင်တာ (MJC) မှ သင်တန်းများကို တက်ရောက်ဖူးသူများ သို့မဟုတ် MJC ၏ business course များနှင့် activities များကို တက်ရောက်ခဲ့သော ကုမ္ပဏီများမှ ဝန်ထမ်းများလည်း လျှောက်ထားနိုင်ပါသည်။

(ထို့အပြင် UMFCCI တွင် အလားတူ business management course များတက်ရောက်ဖူးသူများလည်း အကျုံးဝင်ပါသည်။)

လျှောက်ထားရန်လိုအပ်သည့် အခြားသော criteria များနှင့်၊ သတင်းအချက်အလက်များကို MJC website တွင် ဝင်ရောက်လေ့လာနိုင်ပါသည်။

Website link:

<https://myanmarjapancenter.com/scholarship.../information/>

*လျှောက်လွှာစတင်ဖွင့်လှစ်သည့်နေ့ကို ထပ်မံကြေငြာပေးသွားပါမည်...
စုံစမ်းမေးမြန်းမှုများအတွက်

Long-term Capacity Development Scholarship Program



English

Full scholarship
program

Private Sector

Master & PhD



Scholarship Scheme

- Scholarship: Tuition fees, Living allowance, Research support expenses, Medical care expenses will be covered.



- Duration: **3 years for PhD, 2 years for Master's Course**
- Number of participants: To be decided
- Living allowance : Location of participant's university
- Airfare : Round-trip air ticket

Eligibility

Nationality	Must be citizens of Myanmar
Age	Should be between the ages 22 and 39 as of 1st April, 2027 (Born on/after 2nd April, 1987 and on/ before 1st April, 2005)
Occupation	a. Have an experience for 2 years or more b. Capable to take long-term leave and return to the workplace after 2 years studying in Japan. c. Have awareness of social responsibility, and willing to contribute to the development of private sector of Myanmar and network with Japan.
Academic Background	Must hold a bachelor degree for Master course and a master degree for PhD course
English Proficiency	IELTS 6.5 or TOFEL PBT 550 or TOFEL iBT 80 or TOEIC 800 or Duolingo 110
Participation in MJC program	Those who have taken the MJC Business courses or be executives of the companies that have taken the MJC Business courses and activities before are eligible. Those who have taken related business management courses at UMFCCI are also eligible.
Health conditions	Must be in good mental and physical health to complete the program abroad.
Gender Equality and Women's Empowerment	Female candidates are encouraged to apply for the program.

Field of Study and University List for Master Course

Field of Study

- Agriculture/Environmental
- Management(MBA)
- Economics & Regional Studies
- Engineering/IT
- Tourism

Universities

Nagoya, Okayama, Toyo (3)

IUJ, Kwansei Gakuin, Rikkyo, APU, **Doshisha** (5)

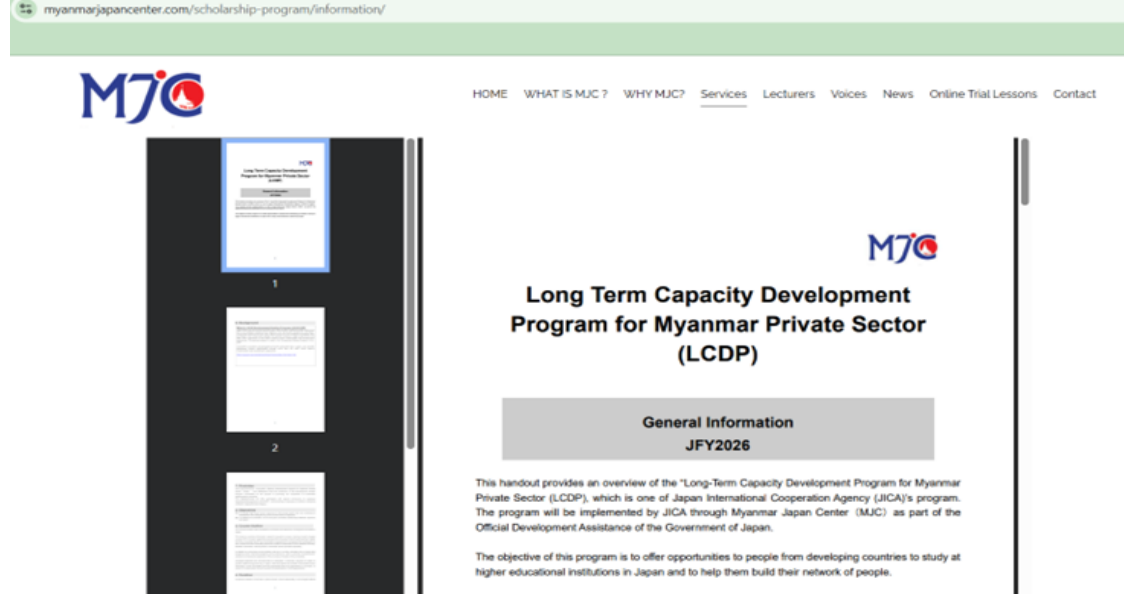
APU, Rikkyo, Toyo (3)

Nagoya, Miyazaki, Kumamoto, Hiroshima, Yokohama, Okayama, Toyo, Kobe ICT, Ritsumeikan (9)

Toyo, APU (2)



Updated universities list will announce in September 2027



LCDP Scholarship (JICA)

myanmarjapancenter.com/wp-content/uploads/2025/08/University-List-for-Long-Term-Capacity-Development-Scholarship-FY-2026.pdf

University-List-for-Long-Term-Capacity-Development-Scholarship-FY-2026... 2 / 7 100%

B. MBA(Master)				
Field of Study	Accepting Universities	Graduate Schools	(Tentative) Date of University Application	Remark
Management (MBA)	International University of Japan (IUJ)	• Graduate School of International Management (GSIM) https://www.ijj.ac.jp/gsim/	TBD (By 31 st March, 2026)	If the applicant does not have GRE or GMAT, the applicant need take an exam of IUJ Math Test at the timing of University Entrance Exam.
	Kwansei Gakuin University	• Graduate School of Institute of Business and Accounting International Management Course (MBA) https://iba.kwansei.ac.jp/en/imsc/	TBD (Around April 1 to May 14, 2026)	English Certificate is necessary before the University Entrance Exam. TOEFL iBT/ IELTS/ TOEIC/GMAT are acceptable.
	Rikkyo University	• Graduate School of Business MASTER IN INTERNATIONAL BUSINESS DEGREE PROGRAM https://www.rikkyo-mib.jp/	TBD	English Certificate is necessary before the matching. TOEFL iBT/ IELTS/ TOEIC/ Duolingo English Test) are acceptable.
	Ritsumeikan Asia Pacific University (APU)	• Graduate School of Management https://admissions.apu.ac.jp/graduate/academics/miba/	TBD (By 5th March 2026)	There is ONLINE ASSESSMENT at the timing of University Entrance Exam. 1.Video Interview (20 – 30 minutes) 2.Watson-Glaser III Critical Thinking Appraisal (30 minutes) 3.Core Abilities Assessment (20 minutes)

myanmarjapancenter.com/scholarship-program/faq/

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Education background	
Q1. Master degree holders and candidates from the Myanmar University can apply? မြန်မာနိုင်ငံတက္ကသိုလ်မှ Master ဘွဲ့ရများနှင့် Master ဘွဲ့တက်ရောက်နေသူများ လျှောက်ထားနိုင်ပါသလား?	A1. Participants who achieved the degree (Master degree included) from one of the recognized universities can apply. အသိအမှတ်ပြုတက္ကသိုလ်တခုခုမှ ဖြစ်ပြီး မြောက် အောင်မြင်ထားသူများ (Master ဘွဲ့ရအပါအဝင်) လျှောက်ထားနိုင်ပါသည်။
Working experiences	
Q1. Although I have previous work experience, I don't have a job now. When I apply the scholar, can I describe the previous work experiences? အရင်လုပ်ခဲ့တာ အလုပ်အဆောင်အကြီးတော့ ရှိပါသည် သို့သော် လတ်တလောတွင် fulltime job ရှိမနေပါ စကောလားလျှောက်လို့ရပါသလား?	A1. The applicants who have total working experiences for 2 years and more can apply. စုစုပေါင်းလုပ်သက် ၂ နှစ်နှင့် အထက်ရှိသူများ လျှောက်ထားနိုင်ပါသည်။
Q2. Currently, I am a freelancer and I don't have any person who will recommend as an organization in-charge (superior). Can I apply this scholarship? လက်ရှိတွင် Freelancer တဦးအနေဖြင့် အလုပ်လုပ်ကိုင်နေသူဖြစ်ပြီး အလုပ် in-charge (အထက်အရာရှိ) အနေဖြင့် အထောက်အပံ့မရှိသူဖြစ်ပါ။ ဥပဒေသဆိုင်ရာ လျှောက်ထားရန် အဆင်ပြေပါသလား?	A2. Freelancers and people who work for their own businesses can nominate themselves by stating their business activities. Freelancer နှင့် ကိုယ်ပိုင်လုပ်ငန်းလုပ်ကိုင်နေသူများအနေနှင့် မိမိကိုယ်တိုင် စံလုပ်ငန်းအကြောင်းကို ဖော်ပြ၍ ကိုယ်တိုင် အမည်စာရင်းတင်သွင်းနိုင်ပါသည်။
Language requirement	
Q1. Is Japanese language required? ဂျပန်စာတတ်နိုင်ရန် အပ်ပါသလား?	A1. The university's program will be taught by English language. တက္ကသိုလ် program များမှာ English ဝိုသင်ကြားမည် ဖြစ်ပါသည်။
Q2. Is IELTS mandatory? IELTS ဖြစ်စေရန် လိုအပ်ပါသလား?	IELTS 6.5 or TOEFL PBT 550 or TOEFL iBT 80 or TOEIC 800 or Equivalent level is required.
Q3. Currently, I don't have any English certificate (high exam fees and can't sit the exam yet) how could I submit for English language	

List of Required Documents

No	Required Documents	File Type
1	OFFICIAL APPLICATION FORM Part A: Information on the Applying Organization Part B: Information about the Applicant Annex 1. University Information Annex 2. Research Plan* & Career Plan after Graduation	Submit the entire application form as a single PDF file . *The "Research and Career Plan" must be submitted as a separate Word document .
2	Graduation certificate. * Officially certified copies of the original * Written in English or accompanied with official translation	PDF
	Academic transcript * Must contain all the grades earned at the university the applicant attended * Officially certified copies of the original transcript * Written in English or accompanied with official translation in English	PDF
	Photocopy of certificate of English Test*	PDF
	Certificate of MJC or UMFCCL	PDF
	A copy of Passport & National Registration Card	PDF

1PDF File & 1 Word File (Research Plan, Career Plan)

Selection Process

Schedule	Steps	Description
October ?, 2026	Application	Closing Date: 2026, October ?
	▼	
Early of October 2026	(1 st selection)	Document Screening by Selection Committee
	▼	
Early of November 2026	(2 nd selection)	In-person Interview by Selection Committee
	▼	
December 2026 - February 2027	Pre-matching	Document screening, interview (if necessary) To match applicants with Japanese university courses/supervisors
	▼	
March-June 2027	Entrance Exam	Screening of submitted university's application documents and interviews by Japanese universities
	▼	
July-August 2027	Final result	JICA will determine the result with consideration of the of the result of university's examination.

How to Write a Research Proposal

 Myanmar Japan Center
1d · 🌐

မင်္ဂလာပါရှင် ...

🔊🔊🔊 ဂျပန်နိုင်ငံရှိ တက္ကသိုလ်များတွင် Master & PhD Scholarship ကိုစိတ်ဝင်စားသူလူငယ်များအတွက်..

📌 MJC ရဲ့ Long -Term Capacity Development Program (LCDP) FY2026 စတင်တော့မှာဖြစ်လို့ မိမိလျှောက်လိုသော ဘာသာရပ်နှင့်ပတ်သက်သည့် အဆိုပြုလွှာရေးသားနည်းကို ပုံပါဇယားတွင်ဖော်ပြထားသည့်အတိုင်း ပြုလုပ်မည်ဖြစ်ပါသဖြင့်မိမိတက်ရောက်လိုသော Seminar ကို google form တွင်ရွေးချယ်စာရင်းသွင်း၍ တက်ရောက်နိုင်မှာဖြစ်သလို

📌 ဩဂုတ်လ ၁၇ ရက်နေ့မှာလည်း Long -Term Capacity Development Program (LCDP) Scholarship နှင့် ပတ်သက်သည့် Orientation Seminar ပြုလုပ်သွားမည်ဖြစ်ပါသည်။ စိတ်ပါဝင်စားသူများအနေဖြင့် အောက်ဖော်ပြပါ google form link တွင်ကြိုတင်စာရင်းပေးကြပါရန်..

📌 ကျင်းပပြုလုပ်မည့်နေရာ - MJC (Myanmar-Japan Center) 12th floor, UMFCCL, No. 29, Min Ye Kyaw Swar Street, Lanmadaw Township, Yangon).

📌 ကြိုတင်စာရင်းသွင်းရန်

<https://forms.gle/xawAC4QQ4mxGJLXRA>

Research Proposal Seminar Schedule by Selection Committee Member (For FY2026) August 2025

No.	Speaker	Field of study	Seminar Mode	Venue	Date	Time
1	Dr. Sein Min	Management (MBA)	In-person	MJC	9-Aug-25 (Sat)	9:00~12:00
2	Dr. Myint Myint Than	IT	In-person	MJC	9-Aug-25 (Sat)	13:00~16:00
3	Dr. Myint Thaung	Agriculture/ Environment	In-person	MJC	10-Aug-25 (Sun)	9:00~12:00
4	Dr. Kyaw Kyaw Moe	Engineering	In-person	MJC	10-Aug-25 (Sun)	13:00~16:00
5	Dr. Myint San	Economics & Tourism	In-person	MJC	16-Aug-25 (Sat)	9:00~12:00
6	Dr. Aung Khaing Min	Engineering	In-person	MJC	16-Aug-25 (Sat)	13:00~16:00
7	Dr. Aung Khaing Min	Scholarship Orientation	In-person	MJC	17-Aug-25 (Sun)	13:00~15:00
8	Dr. Thi Thi Zin (Guest Speaker_University of Miyazaki)	Engineering/ IT	Online		30-Aug-25 (Sat)	MM 9:00~10:00 JP 11:30~12:30

➤ Recorded seminar sessions reopened **every week**

Winning International Scholarships: Research Proposal Development and Interview Mastery



Myanmar Japan Center

22 hours ago · 🌐

#FY2026Scholarship

📌 အိပ်မက်ကြီးကြီးမားမားရှိပေမယ့် Research Proposal ရေးတဲ့အခါ ဘယ်ကစရ မှန်းမသိဖြစ်နေလား။ ဒါမှမဟုတ် Interview နဲ့ကြုံရင် ခြေကုန်လက်ပမ်းကျနေ လား။... [See more](#)

Online Course



WINNING INTERNATIONAL SCHOLARSHIPS: RESEARCH PROPOSAL DEVELOPMENT AND INTERVIEW MASTERY

A Practical 12-Hour Intensive Course for Master's and PhD Scholarship Applicants

Session	Topic	Duration
1	Finding and Selecting the Right Scholarship	2 Hours (5.9.2026) 7pm MMT
2	Developing a Competitive Research Proposal	2 Hours (6.9.2026) 7pm MMT
3	Nature of Research and Developing a Research Topic	2 Hours (12.9.2026) 7pm MMT
4	Literature Review and Research Design	2 Hours (13.9.2026) 7pm MMT
	Research Methodology and Ethics	2 Hours (19.9.2026) 7pm MMT
	Scholarship Interview Preparation	2 Hours (20.9.2026) 7pm MMT



သင်တန်းကာလ: ၁၂ နာရီ



သင်တန်းပုံစံ: Online (Zoom)



သင်တန်းကြေး: [30,000 MMK]

Course Duration:

1.Finding and Selecting the Right Scholarship

2 Hours (5.9.2026) 7pm MMT

2.Developing a Competitive Research Proposal

2 Hours (6.9.2026) 7pm MMT

3.Nature of Research and Developing a Research

Topic 2 Hours

(12.9.2026) 7pm MMT

4.Literature Review and Research Design

2 Hours

(13.9.2026) 7pm MMT

5.Research Methodology and Ethics

2 Hours (19.9.2026)

7pm MMT

6.Scholarship Interview Preparation

2 Hours (20.9.2026)

7pm MMT

🔗 သင်တန်းစာရင်းသွင်းရန်

<https://forms.gle/K3EhyckA5c7cDLpx8>

🔴🔴🔴! Form တွင် မိမိနှင့်သက်ဆိုင်တဲ့အချက်အလက်များကိုဖြည့်သွင်းပြီး submit တစ်ကြိမ်လုပ်ရန်ရပါပြီနော်.. [See less](#)

Final Suggestion!

- These tips are only based **on my experience** and do not guarantee success. You should **take time to find what works for you**.
- You should put a **good effort** into writing research proposal. It brings important **academic and career benefits** and is a great chance to clarify your research direction.



It's your turn to Study in Japan!!!

