

# Shotaro Beppu

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## Education

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Massachusetts Institute of Technology (MIT)

MASc IN DATA, ECONOMICS AND DEVELOPMENT POLICY

'23/02 - '23/08

- Capstone supervisor: Dave Donaldson, Tobias Salz
- 4.8/5.0

The University of Tokyo

BACHELOR IN ENGINEERING (SYSTEMS)

'19/04 - '23/03

- Advisor: Yasuyuki Sawada (Econ), Akihiko Matsui (Econ), Ryuichi Shibasaki (Eng)
- 3.85/4.0 (1st in program of 129 students)

## Research Papers

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### Ongoing papers

Technology with unequal gains: Steamship and globalization

[pdf](#)

UNDERGRADUATE THESIS

- Digitize shipping data in historical tables using deep learning (Graph Neural Network)
- Analysis of transition from sailing to steamships on shipping, trade, and growth

Diffusion of war through international arms trade

[pdf](#)

INDEPENDENT PROJECT ADVISED BY YASUYUKI SAWADA AND AKIHIKO MATSUI (UNIV. TOKYO)

- Formulate a model of international arms trade and probability of conflict
- Estimate effect of weapons on war using end of conflict in other regions as an instrument

Stability of trading blocs

[pdf](#)

TWO-WEEK RESEARCH PROJECT ADVISED BY GEORGE CHARLSON (UNIV. CAMBRIDGE)

- Formulate a network model to test stability of trading blocs
- Simulate possible paths of trading blocs

Uncovering the border-crossing cost in transportation

GROUP PROJECT

- Fieldwork in the Philippines investigating tricycle (taxi) behavior
- Investigate the effect of zoning by tricycle groups on price

### Publication

Beppu, S., Fujii, D., Kubota, H., Machi, K., Maeda, Y., Nakata, T., & Shibuya, H. 2023. Cross-regional heterogeneity in health and economic outcomes during the COVID-19 pandemic: An analysis of Japan. *Journal of the Japanese and International Economies*, 70. [pdf](#)

Thu, M. K., Beppu, S., Yarime, M., & Shibayama, S. 2022. Role of machine and organizational structure in science. *PLOS ONE*, 17(8). [pdf](#)

## Research Experience

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Research Assistant

ADVISOR: DAVE DONALDSON (MIT)

'23

- Analysis of crop productivity and trade
- Analysis of agglomeration effect in the Midwest

## Research Assistant

ADVISOR: TOBIAS SALZ (MIT)

Summer '23

- Analysis of RCT switching some user's default search engine
- Estimate effect of incumbency and default switch

## Research Assistant

ADVISOR: YASUYUKI SAWADA (UNIV. TOKYO)

'21-'22

- Replication of multiple RCTs in education and conduct additional tests
- Analyze satellite data to construct road network and analyze weather
- Fieldwork in the Philippines

## Research Assistant

ADVISOR: TAISUKE NAKATA (UNIV. TOKYO)

'21-'22

- Weekly projection of COVID-19 statistics using macro-epidemiological model
- Estimate value of statistical life using the pandemic
- Investigate effect of restriction policies on restaurants and diffusion of the virus

## Data Science Experience

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### UChicago Urban Labs E&E Lab

PROJECT ASSOCIATE

'23/09-Present

- Create ML algorithm and analyse satellite imagery to predict pollution violation
- Analysis of mobile ping data to understand short and long term effect of disasters

### U-Tokyo Matsuo Lab

ML ENGINEER

'21/10-'22/12

- Create ML algorithm to predict viewers
- Estimate the effect of commercials on viewers
- Implement optimization problem for commercial allocation

### The University of Tokyo Market Design Center (UTMD)

INTERN

'22/08-'22/12

- Implement serial dictatorship matching algorithms for university's study abroad program

### World Bank DIME

INTERN

'21/06-'22/02, '22/06-'22/08

- Conduct NLP to clean and extract variables from surveys
- Use LLM to vectorize judicial texts for bias analysis
- Scrape Google trends data to investigate Ramadan effect on personal behavior

## Awards & Fellowships

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2023 **Department Award for the Department of Engineering**, The University of Tokyo  
**Scholarship for Mid- to Long-Term Studies**, Friends of UTokyo, Inc

2021 **Scholarship for Short-Term Studies**, Friends of UTokyo, Inc  
**GLP-GEFIL Scholarship**, The University of Tokyo

## Other

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### LANGUAGE

Japanese (native), English (TOEFL 112, IELTS 8.0), French (basic)

### PROGRAMMING

R, Python, STATA, MATLAB, Java

### OTHER INTERESTS

Football (soccer), Ancient history