

Shotaro Beppu

PROJECT ASSOCIATE · UCHICAGO URBAN LABS E&E LAB

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Research Interests

My research is at the intersection of spatial and development economics, studying how different forms of market integration, both across and within regions, affect livelihoods. Specifically, I have focused on the network aspects of society such as trade, transportation, and social networks. My aim is to combine data and economic theory to provide insights into globalization, urbanization, and sustainable development.

Education

Massachusetts Institute of Technology (MIT)

MASC IN DATA, ECONOMICS AND DEVELOPMENT POLICY

'23/02 - '23/08

- Capstone supervisor: Dave Donaldson, Tobias Salz

The University of Tokyo

BACHELOR IN ENGINEERING (SYSTEMS)

'19/04 - '23/03

- Advisor: Yasuyuki Sawada (Econ), Akihiko Matsui (Econ), Ryuichi Shibasaki (Eng)
- Humanities and Social Sciences I → Engineering

Research Papers

Ongoing

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

Published

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

Research Assistant

Cambridge

ADVISOR: DAVE DONALDSON (MIT)

'23

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

Research Assistant

ADVISOR: TOBIAS SALZ (MIT)

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

Cambridge
Summer '23

Research Assistant

ADVISOR: YASUYUKI SAWADA (UNIV. TOKYO)

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

Tokyo
'21-'22

Research Assistant

ADVISOR: TAISUKE NAKATA (UNIV. TOKYO)

- 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

Tokyo
'21-'22

Professional Experience

UChicago Urban Labs E&E Lab

PROJECT ASSOCIATE

- 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

Chicago
'23/09-Present

U-Tokyo Matsuo Lab

ML ENGINEER

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

Tokyo
'21/10-'22/12

World Bank DIME

INTERN

- 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

Washington D.C. (Remote)
'21/06-'22/02, '22/06-'22/08

The University of Tokyo Market Design Center (UTMD)

INTERN

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

Tokyo
'22/08-'22/12

UTokyo Economic Consulting Inc. (UTEcon)

INTERN

- Analyze price fluctuation in Japan using commodity data

Tokyo
'22/02-'22/04

Ministry of Economy, Trade and Industry, Japan

INTERN

- Policy analysis on electrical vehicles

Tokyo
'20/08

Awards & Fellowships

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 Information

LANGUAGE

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

PROGRAMMING

R, Python, STATA, MATLAB, Java

OTHER INTERESTS

Football (Soccer), Rowing, Cycling
Political Philosophy, Ancient history