



Prof. Ichiro Sakata

(Eng. Bldg 3, Room 201)

Research Guideline

- Opening up an new frontier in the field of Technology Management with both profound knowledge of advanced technologies and advanced analytical methods
- Formation of an international hub for the innovation study
- Students can decide their research topics according their interests and Laboratory staff will support their research activities
- We also support students to join international research projects or to present their research results at international academic conferences

Research Activities

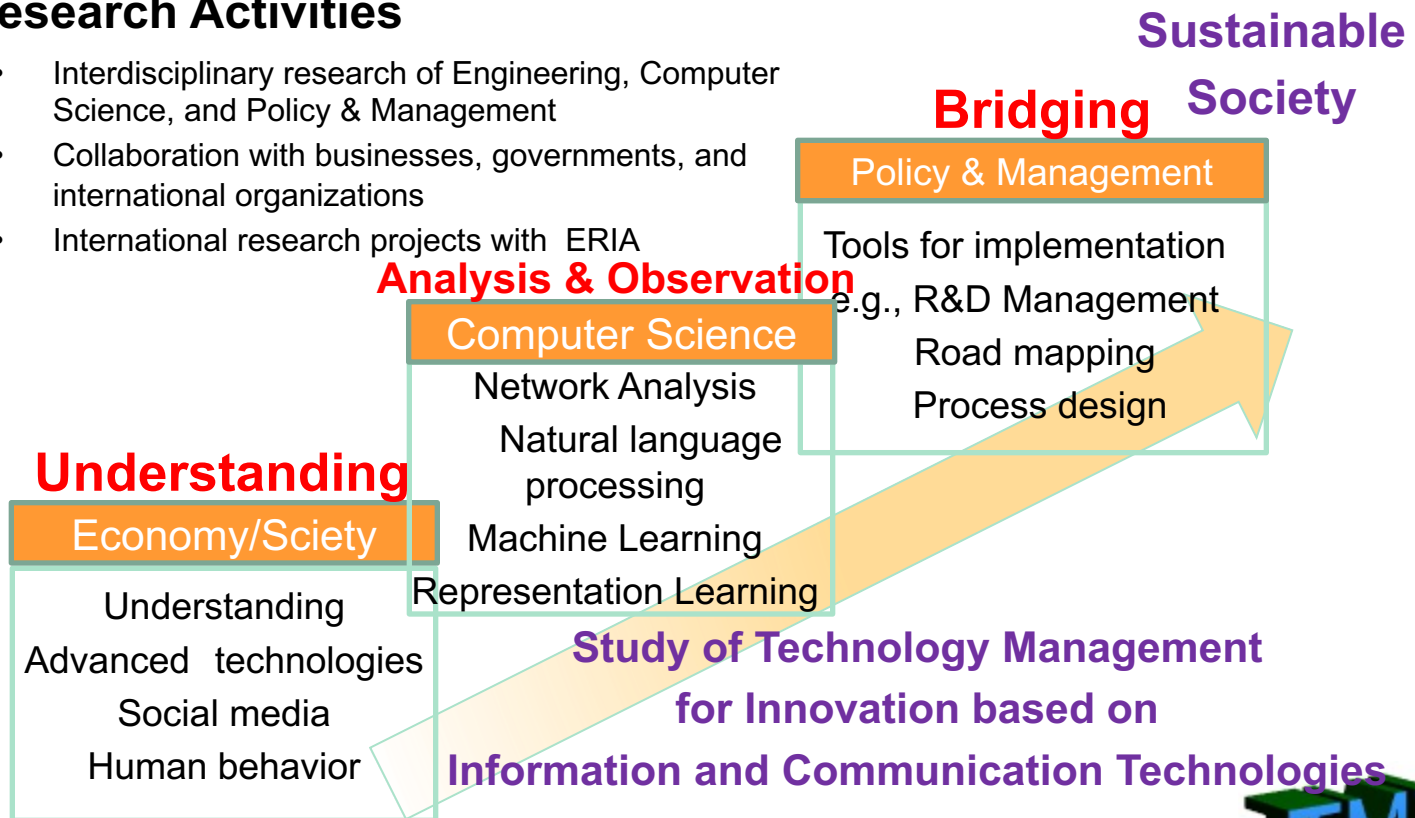
- Interdisciplinary research of Engineering, Computer Science, and Policy & Management
- Collaboration with businesses, governments, and international organizations
- International research projects with ERIA



Associate Prof. J. Mori



Lecturer K. Asatani

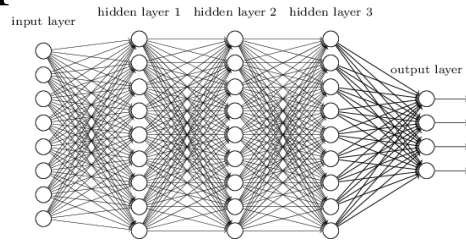


Fields of studies

<methodology>

Deep learning

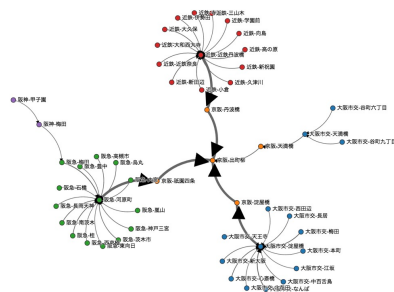
Representation learning



Computational linguistics

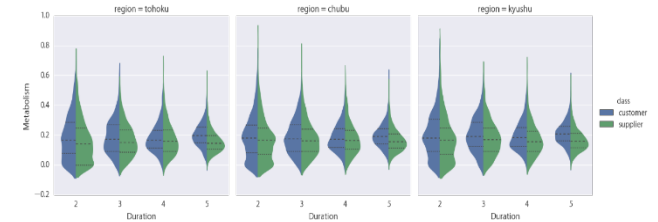


Network analysis

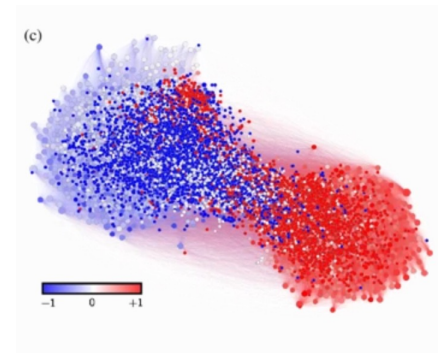


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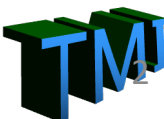
Economic data



Social data



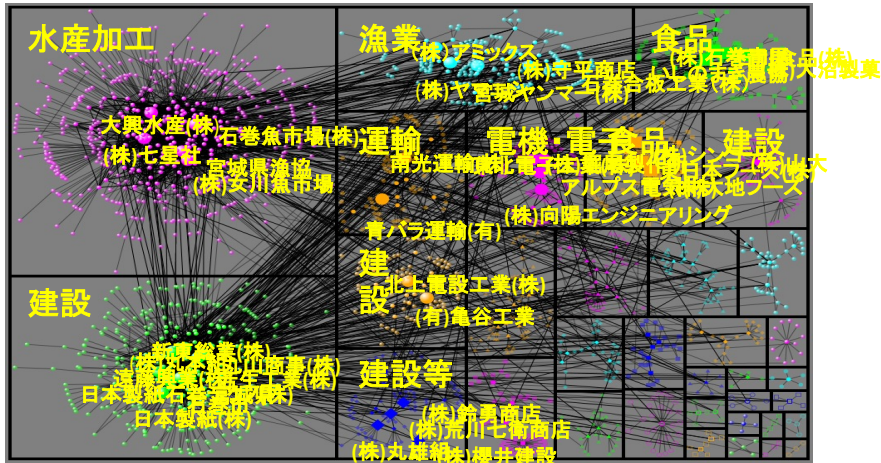
Scientific data



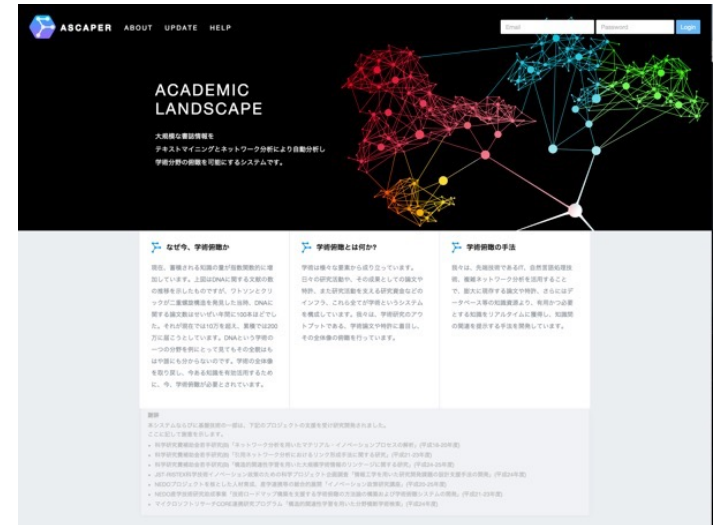
Social application of lab. achievements

1. Regional Network Analysis

-Connector-Hub index



2. Future Prediction System



● **NHK Special** “Big data for the recovery from East Japan Great Earthquake, Sept.12th,2013”

● **NHK Special** “AI for Japanese future society, Mar. 3rd, 2018”



3. Public Big Data Analysis

● “Interpersonal Relationships in Large-Scale Railway Trip Data”, Journal of Computational Social Science 1,2018

4. Outgoing to the world:

● “Five years on from Fukushima”, Nature Vol. 531, Issue 7592, March 3, 2016



Journal and conference papers of Lab students

<Ph.D. Students>

T. Goji, Y. Hayashi, and I. Sakata, “Evaluating “startup readiness”for researchers: Case studies of research-based startups with biopharmaceutical research topics”, **Heliyon** 6 (2020), e04160.

T. Kose and I. Sakata, “Identifying technology convergence in the field of robotics research”, **Technological Forecasting and Social Change** vol.146 (2019) pp.751-766.

M. Isonuma, J. Mori, D. Bollegala, and I. Sakata, "Tree-Structured Neural Topic Model" The 58th Annual Meeting of the Association for Computational Linguistics (**ACL, 2020**) (July 6-8, 2020).

M. Isonuma, J. Mori, and I. Sakata, “Unsupervised Neural Single-Document Summarization of Reviews via Learning Latent Discourse Structure and its Ranking”, The 57th Annual Meeting of the Association for Computational Linguistics (**ACL 2019**) , Florence, Italy (July 28-Aug 2, 2019)

T. Maeda, J. Mori, M. Ochi, T. Sakimoto and I. Sakata, “Measurement of opportunity cost of travel time for predicting future residential mobility based on the smart card data of public transportation”, **International Journal of Geo-Information** vol.7,416 (2018):ijgi7000416.

Journal and conference papers of Lab students

<Master Students>

Large-scale analysis of delayed recognition using sleeping beauty and the prince. T Miura, K Asatani, I Sakata, *Applied Network Science* 6 (1), 1-28 (2021)

T. Miura, K. Asatani, I. Sakata, "Classifying Sleeping Beauties and Princes Using Citation Rarity" *The 9th International Conference on Complex Networks and Their applications (COMPLEX NETWORKS 2020)*, , delivered online (Dec 1-3, 2020).

C. J., Shiau, M., Ouchi, K. Nagahama, T. Sakaki, J., Mori and I., Sakata, "Constructive Approach for Early Extraction of Viral Spreading Social Issues from Twitter", *12th ACM Web Science Conference 2020*, delivered online (July 6-10, 2020). **The Best Student Paper "Honorable Mention Award"**.

X. Leng, M. Ochi, T. Sakaki, J. Mori, and I. Sakata, "A Cross-lingual Analysis on Culinary Perceptions to Understand the Cross-cultural Difference", *AAAI 2019 Spring Symposia*, Palo Alto, CA, USA (Mar 25-27, 2019) **Special Paper Award from Reviewers**

<Undergraduate students>

Maiko Kamada, Kimitaka Asatani, Masaru Isonuma, Ichiro Sakata. Discovering Interdisciplinarily Spread Knowledge in the Academic Literature, *IEEE ACCESS*, 2021

M. Kamada, K. Asatani, M. Isonuma, and I. Sakata, "Discovering Remarkable Meme in Academic Literature Considering Diffusion Process", *The Network Science Society 2020 (NetSci 2020, poster)*

N. Sato, K. Asatani, T. Sakaki, and I. Sakata, "Measuring Polarization in Topic-independent Network on Twitter", *The Network Science Society 2020 (NetSci 2020, poster)*