CONTACT

Cambridge, MA 02138

617-201-2328

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SKILLS

- Python
- C++
- JavaScript
- Large Language Models
- Diffusion Models

MAYA OKAWA

Google Scholar LinkedIn

EXPERIENCE

Research Fellow Harvard University - Cambridge, MA
03/2023 - Present

- Research on the behavior of generative AI systems through the lenses of social cognition, social dynamics, and physics, focusing on bias formation, emergent capabilities, and collective decision-making.

Research Scientist NTT R&D - Tokyo, Japan
09/2014 - 02/2023

- 2014 – 2018 Developed time-series and spatiotemporal models to analyze collective human behavior in real-world environments.
- 2019 – 2023 Integrated deep learning and social science to analyze social cognition and behavioral dynamics, including information diffusion, opinion formation, and collective decision-making.

EDUCATION

Doctor of Philosophy (Ph.D.): Computer Science
Kyoto University - Kyoto, 01/2022

Master of Science (M.S.): Physics
University of Tokyo - Tokyo, 01/2014

Bachelor of Science (B.S.): Physics
Sophia University - Tokyo, 01/2012

PUBLICATIONS

How Selection Shapes Diversity in LLM Ecosystems
Maya Okawa
NeurIPS - Advances in Neural Information Processing Systems, 2026

Emergence of Biased Consensus in Multi-Agent LLM Debates
Maya Okawa
ICML - International Conference on Machine Learning, 2026

Emergence of Hierarchical Emotion Organization in Large Language Models
Maya Okawa*, Bo Zhao*, Eric Bigelow, Rose Yu, Tomer Ullman, Ekdeep Singh Lubana, Hidenori Tanaka

ICML - International Conference on Machine Learning, 2026

Aggregated Multi-output Gaussian Processes with Knowledge Transfer Across Domains
Yusuke Tanaka, Toshiyuki Tanaka, Tomoharu Iwata, Takeshi Kurashima, **Maya Okawa**, Yasunori Akagi, Hiroyuki Toda
Machine Learning (Springer), Vol. 115, Article 73, 2026

Representation Shattering in Transformers: A Synthetic Study with Knowledge Editing
Kento Nishi, **Maya Okawa**, Rahul Ramesh, Mikail Khona, Hidenori Tanaka, and Ekdeep Singh Lubana
ICML - International Conference on Machine Learning, 2025

ICLR: In-Context Learning of Representations
Christopher F. Park, Andrew Lee, Ekdeep Singh Lubana, Yongyi Yang, **Maya Okawa**, Kento Nishi, Martin Wattenberg, Hidenori Tanaka
ICLR – International Conference on Learning Representations, 2025

Swing-by Dynamics in Concept Learning and Compositional Generalization
Yongyi Yang, Christopher F. Park, Ekdeep Singh Lubana, **Maya Okawa**, Wei Hu, Hidenori Tanaka
ICLR – International Conference on Learning Representations, 2025

Emergence of Hidden Capabilities: Exploring Learning Dynamics in Concept Space
Maya Okawa*, Core F Park*, Andrew Lee, Ekdeep S Lubana, Hidenori Tanaka, NeurIPS − Advances in Neural Information Processing Systems, 2024 (Spotlight)

Towards an Understanding of Stepwise Inference in Transformers: A Synthetic Graph Navigation Model
Mikail Khona, **Maya Okawa**, Jan Hula, Rahul Ramesh, Kento Nishi, Robert Dick, Ekdeep Singh Lubana, Hidenori Tanaka
ICML − The International Conference on Machine Learning, 2024

Meta-Learning for Neural Network-based Temporal Point Processes
Yoshiaki Takimoto, Yusuke Tanaka, Tomoharu Iwata, **Maya Okawa**, Hideaki Kim, Hiroyuki Toda, Takeshi Kurashima
arXiv preprint, 2024

Compositional Abilities Emerge Multiplicatively: Exploring Diffusion Models on a Synthetic Task
Maya Okawa, Ekdeep S Lubana, Robert Dick, Hidenori Tanaka
NeurIPS − Advances in Neural Information Processing Systems, 2023

Predicting Opinion Dynamics via Sociologically-Informed Neural

Networks
Maya Okawa, Tomoharu Iwata
KDD − 28th ACM SIGKDD Conference on Knowledge Discovery and Data Mining, 2022

Dynamic Hawkes Processes for Discovering Time-evolving Communities' States behind Diffusion Processes
Maya Okawa, Tomoharu Iwata, Yusuke Tanaka, Hiroyuki Toda, Takeshi Kurashima, Hisashi Kashima
KDD − 27th ACM SIGKDD Conference on Knowledge Discovery and Data Mining, 2021

Deep Mixture Point Processes: Spatio-temporal Event Prediction with Rich Contextual Information
Maya Okawa, Tomoharu Iwata, Takeshi Kurashima, Yusuke Tanaka, Hiroyuki Toda, Naonori Ueda
KDD − 25th ACM SIGKDD Conference on Knowledge Discovery and Data Mining, 2019

Refining Coarse-Grained Spatial Data Using Auxiliary Spatial Data Sets with Various Granularities
Yusuke Tanaka, Tomoharu Iwata, Toshiyuki Tanaka, Takeshi Kurashima, **Maya Okawa**, Hiroyuki Toda
AAAI − 32th AAAI Conference on Artificial Intelligence, 2019

Spatially aggregated Gaussian processes with multivariate areal outputs
Yusuke Tanaka, Toshiyuki Tanaka, Tomoharu Iwata, Takeshi Kurashima, **Maya Okawa**, Yasunori Akagi, Hiroyuki Toda
NeurIPS −Advances in Neural Information Processing Systems, 2019

Predicting Traffic Accidents with Event Recorder Data
Yoshiaki Takimoto, Yusuke Tanaka, Takeshi Kurashima, Shuhei Yamamoto, **Maya Okawa**, Hiroyuki Toda
PredictGIS − 3rd ACM SIGSPATIAL International Workshop on Prediction of Human Mobility, 2019

Online traffic flow prediction using convolved bilinear Poisson regression
Maya Okawa, Hideaki Kim, Hiroyuki Toda
MDM − 18th IEEE International Conference on Mobile Data Management, 2017

AWARDS

Honorable Mention Award, 2017, 18th IEEE International Conference on Mobile Data Management (MDM), Awarded by IEEE

Ph.D. Research Scholarship from Business Communication co., ltd.

DBSJ Kambayashi Young Researcher Award, 2022

Telecommunications Award, 2022, Awarded by The Telecommunication Advancement Foundation

COMMUNITY SERVICE

Conference Reviewer NeurIPS, ICML, and ICLR
01/2023 – Present

Conference Reviewer PAKDD
01/2023 - 03/2024

Conference Reviewer AAAI
08/2019 - 12/2021