Yusei Ito

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Employment

May 2024 – September 2024: Internship, OMRON SINIC X Corporation

Supervisor: Dr. Tatsunori Taniai & Dr. Ryo Igarashi

Published a ICLR2025 paper [3].

April 2023 – March 2025:　Project Researcher (part time), Osaka University

Education

Osaka University, Japan (April 2019 – present)

April 2025 – present: **Ph.D. course of Engineering** in Applied Physics

Supervisor: Prof. Kanta Ono

March 2025:　**Master of Engineering** in Applied Physics

Supervisor: Prof. Kanta Ono

March 2023:　**Bachelor of Engineering** in Applied Physics

Supervisor: Prof. Kanta Ono

Awards

January 2024:　第 37 回 放射光学会年会 放射光科学合同シンポジウム 学生発表賞

March 2023:　SICE 優秀学生賞

December 2020:　大阪大学 全学教育優秀賞

Publications

◆　**Journals**

[1] Yusei Ito, Yasuo Takeichi, Hideitsu Hino, Kanta Ono, "Optimal spectroscopic measurement design: Bayesian framework for rational data acquisition", Machine Learning: Science and Technology **6**, 025037 (2025).

[2] Yusei Ito, Yasuo Takeichi, Hideitsu Hino, Kanta Ono, "Rational partitioning of spectral feature space for effective clustering of massive spectral image data", Scientific Reports **14**, 22549 (2024).

◆ **International Conference (Refereed)**

[3] Yusei Ito*, Tatsunori Taniai*, Ryo Igarashi, Yoshitaka Ushiku, Kanta Ono, "Rethinking the role of frames for SE(3)-invariant crystal structure modeling", The Thirteenth International Conference on Learning Representations (ICLR 2025), Singapore, April (2025).

[4] Yuki Nishihori, Yusei Ito, Yuta Suzuki, Ryo Igarashi, Yoshitaka Ushiku, Kanta Ono, "Transformer as a Neural Knowledge Graph" , AI for Accelerated Materials Design-ICLR2025 Workshop, Singapore, April (2025).

[5] Yusei Ito, Yasuo Takeichi, Hideitsu Hino, Kanta Ono, "Optimal Spectroscopic Measurement Design: Bayesian Framework for Rational Data Acquisition", AI for Accelerated Materials Design-NeurIPS2024 Workshop, Vancouver, Canada, December (2024).

◆ **International Conference (Unrefereed)**

[6] Yusei Ito, Yasuo Takeichi, Hideitsu Hino, Kanta Ono, "Gigapixel X-ray Spectromicroscopy Data Analysis by Clustering", 16th International Conference on X-Ray Microscopy (XRM 2024), Lund, Sweden, August (2024). (oral presentation)

[7] Yusei Ito, Yasuo Takeichi, Hideitsu Hino, Kanta Ono, "Optimal Spectromicroscopic Experimental Design for Massive Data Acquisition", 16th International Conference on X-Ray Microscopy (XRM 2024), Lund, Sweden, August (2024).

[8] Yasuo Takeichi, Yusei Ito, Yasuhiro Niwa, Masuo Kimura, Kanta Ono, "Development and conventional analysis of gigapixel imaging XAFS", 16th International Conference on X-Ray Microscopy (XRM 2024), Lund, Sweden, August (2024).

[9] Yusei Ito, Yasuo Takeichi, Hideitsu Hino, Reiko Murao, Kanta, Ono, "Gigapixel X-ray micro-spectroscopy data analysis by using machine learning", Twenty-Sixth Congress and General Assembly of the International Union of Crystallography (IUCr 2023), Melbourne, Australia, August (2023).

[10] Yasuo Takeichi, Yusei Ito, Yasuhiro Niwa, Reiko Murao, Masao Kimura, Kanta Ono, "Development of gigapixel imaging XAFS", Twenty-Sixth Congress and General Assembly of the International Union of Crystallography (IUCr 2023), Melbourne, Australia, August (2023).

◆ **Domestic Conference**

17 talks (including 9 as first presenter)

Skills

- 5+ years of programming experience in **Python**
- Learner of **Julia** and **Java** (not mastering)
- Building deep learning models using **PyTorch**
- Physics data analysis using **scikit-learn** and **original machine learning models**
- **English** – Business level (TOEIC 815 of 990 in December 2023)