

Yuta Saito

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Last Updated April 26, 2020

Research Interests

My research lies at the intersection of machine learning and causal inference called *counterfactual machine learning*. I am interested in the counterfactual nature of logged bandit feedback obtained from interactive systems, and ways of using biased real-world datasets to assist better decision making.

Education

2016 - Present **Tokyo Institute of Technology**
B.Eng. in Industrial Engineering and Economics
Research Field: Machine Learning, Causal Inference, Information Retrieval

Publication (refereed)

1. **Yuta Saito**. “Asymmetric Tri-training for Debiasing Missing-Not-At-Random Explicit Feedback”. In *Proceedings of the 43rd International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR2020)*, 2020 (to appear).
2. **Yuta Saito**, Gota Morishita, and Shota Yasui. “Dual Learning Algorithm for Delayed Conversions”. In *Proceedings of the 43rd International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR2020)*, 2020 (to appear).
3. **Yuta Saito**, Hayato Sakata, and Kazuhide Nakata. “Cost-Effective and Stable Policy Optimization Algorithm for Uplift Modeling with Multiple Treatments”. In *Proceedings of the 2020 SIAM International Conference on Data Mining (SDM2020)*, 2020.
4. **Yuta Saito**, Suguru Yaginuma, Yuta Nishino, Hayato Sakata, and Kazuhide Nakata. “Unbiased Recommender Learning from Missing-Not-At-Random Implicit Feedback”. In *Proceedings of the 13th International Conference on Web Search and Data Mining (WSDM2020)*, 2020.
5. **Yuta Saito**, Hayato Sakata, and Kazuhide Nakata. “Doubly Robust Prediction and Evaluation Methods Improve Uplift Modeling for Observational Data”. In *Proceedings of the 2019 SIAM International Conference on Data Mining (SDM2019)*, 2019.

Workshop Papers (refereed)

1. **Yuta Saito**. “Unsupervised Domain Adaptation Meets Offline Recommender Learning”. *NewInML session (co-located with NeurIPS 2019)*, 2019.
2. **Yuta Saito**. “Unbiased Pairwise Learning from Implicit Feedback”. *NeurIPS 2019 Workshop on Causal Machine Learning*, 2019, (**Spotlight Presentation**).
3. **Yuta Saito** and Shota Yasui. “Counterfactual Cross-Validation”. *ACM RecSys 2019 Workshop on Reinforcement and Robust Estimators for Recommendation (REVEAL)*, 2019.

Preprints and Under Review Papers

1. **Yuta Saito.** “Dual Matrix Factorization for Recommendation with Missing-Not-At-Random Implicit Feedback”. *Under Review*.
2. **Yuta Saito.** “Unbiased Recommender Learning from Biased Graded Implicit Feedback”. *Under Review*.
3. **Yuta Saito.** “Offline Recommender Learning Meets Unsupervised Domain Adaptation”. *Under Review*.
4. **Yuta Saito.** “Doubly Robust Estimator for Ranking Metrics with Post-Click Conversions”. *Under Review*.
5. **Yuta Saito.** “Unbiased Pairwise Learning from Biased Implicit Feedback”. *Under Review*.
6. **Yuta Saito** and Shota Yasui. “Counterfactual Cross-Validation: Stable Model Selection Procedure for Causal Inference Models”. *arxiv preprint arXiv:1909.05299*.

Work and Internship Experiences

Apr 2020 - Present	Sony Corporation, Shinagawa, Tokyo, Japan <i>Research Partner (under an outsourcing agreement)</i> Empirical study on heterogeneous causal effect prediction and its application to treatment optimization.
Apr 2020 - Present	CyberAgent, Inc., AI Lab, Shibuya, Tokyo, Japan <i>Research Partner (under an outsourcing agreement)</i> Research on counterfactual machine learning. Published one short paper and two workshop papers at top-tier machine learning conferences.
Apr 2020 - Present	SMN Corporation, a.i lab., Osaki, Tokyo, Japan. <i>Research Partner (under an outsourcing agreement)</i> Research on debiasing methods for recommender systems and learning-to-rank.
Feb 2020 - Present	ZOZO Technologies, Inc., Aoyama, Tokyo, Japan <i>Research Partner (under an outsourcing agreement)</i> Empirical study on off-policy evaluation and its application to a large-scale fashion e-commerce recommender system.
Nov 2019 - Present	Jinch Co., Ltd., Suginami-ku, Tokyo, Japan <i>Part-time Researcher</i> Research on off-policy evaluation (joint with Yusuke Narita).
Mar 2019 - Jun 2019	Nakata Lab, Tokyo Institute of Technology, Meguro-ku, Tokyo, Japan. <i>Research Assistant</i> Research on uplift modeling.
Dec 2017 - Sep 2019	SMN Corporation, a.i lab., Osaki, Tokyo, Japan. <i>Research Internship</i> Research on uplift modeling and recommender systems. Published three full papers at top-tier machine learning conferences.

Professional Activities

Conference Oral Presentations

- Feb 2020** International Conference on Web Search and Data Mining (WSDM)
“Unbiased Recommender Learning from Missing-Not-At-Random Implicit Feedback”
- Dec 2019** NeurIPS Workshop on Causal Machine Learning
“Unbiased Pairwise Learning from Implicit Feedback”
- May 2019** SIAM International Conference on Data Mining (SDM)
“Doubly Robust Prediction and Evaluation Methods Improve Uplift Modeling for Observational Data”

Selected Invited Talks

- Oct 2019** Mitsubishi UFJ Research and Consulting / Metrics Work Consultants Inc., Minato-ku, Tokyo, Japan
“Intesection of Causal Inference and Machine Learning: An Overview”
- Jul 2019** Sony Corporation., Osaki, Tokyo, Japan
“Recent Topics on Counterfactual Machine Learning”
- May 2019** CyberAgent, Inc., AdTech Studio., Shibuya, Tokyo, Japan
“Unsupervised Domain Adaptation and Its Application to CTR Prediction”

Languages

Japanese (native), English

Referees

Available upon request.