# Yuta Saito

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## Research Interests

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

## Education

**2021 -**      **Cornell University**
Incoming Ph.D. Student in Computer Science
Advisors: Thorsten Joachims and Nathan Kallus
Research Field: Counterfactual Inference, Learning from Human Behavior Data

**2016 -**
**2021**      **Tokyo Institute of Technology**
B.Eng. in Industrial Engineering and Economics
Research Field: Counterfactual Inference, Off-Policy Evaluation, Information Retrieval

## Publications

### Preprints

1. **Yuta Saito**, Shunsuke Aihara, Megumi Matsutani, and Yusuke Narita. Open Bandit Dataset and Pipeline: Towards Realistic and Reproducible Off-Policy Evaluation. *arXiv preprint arXiv:2008.07146*, 2020.

### International Conference Proceedings (refereed)

1. Nathan Kallus, **Yuta Saito**, and Masatoshi Uehara. Optimal Off-Policy Evaluation from Multiple Logging Policies. In *Proceedings of 38th International Conference on Machine Learning (ICML)*, 2021 (to appear).

2. **Yuta Saito**. Doubly Robust Estimator for Ranking Metrics with Post-Click Conversions. In *Proceedings of the 14th ACM Conference on Recommender Systems (RecSys)*, 2020.

3. **Yuta Saito**. Unbiased Pairwise Learning from Biased Implicit Feedback. In *Proceedings of 6th ACM SIGIR International Conference on the Theory of Information Retrieval (ICTIR)*, 2020.

4. **Yuta Saito** and Shota Yasui. Counterfactual Cross-Validation: Stable Model Selection Procedure for Causal Inference Models. In *Proceedings of 37th International Conference on Machine Learning (ICML)*, 2020.

5. **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 (SIGIR)*, 2020.

6. **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 (SIGIR)*, 2020 (short paper).

7. **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 (SDM)*, 2020.

8. **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 (WSDM)*, 2020.

9. **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 (SDM)*, 2019.

## International Conference Tutorial Proposals

1. **Yuta Saito** and Thorsten Joachims. Counterfactual Evaluation and Learning for Recommender Systems: Foundations, Implementations, and Recent Advances. In *Proceedings of the 15th ACM Conference on Recommender Systems (RecSys)*, 2021 (to appear).

## International Conference Workshop Papers (refereed)

1. **Yuta Saito**, Shunsuke Aihara, Megumi Matsutani, and Yusuke Narita. A Large-scale Open Dataset for Bandit Algorithms. *RecSys 2020 Workshop on Bandit and Reinforcement Learning from User Interactions (REVEAL)*, 2020 (**Oral Presentation**).

2. **Yuta Saito**, Takuma Udagawa, and Kei Tateno. Data-Driven Off-Policy Estimator Selection: An Application in User Marketing on An Online Content Delivery Service. *RecSys 2020 Workshop on Bandit and Reinforcement Learning from User Interactions (REVEAL)*, 2020.

3. **Yuta Saito**, Shunsuke Aihara, Megumi Matsutani, and Yusuke Narita. A Large-scale Open Dataset for Bandit Algorithms. *ICML 2020 Workshop on Real World Experiment Design and Active Learning (RealML)*, 2020.

4. Daisuke Moriwaki, Yuta Hayakawa, Isshu Munemasa, **Yuta Saito**, and Akira Matsui. Unbiased Lift-based Bidding System. In *Proceedings of the 2020 AdKDD&TargetAd Workshop, held in conjunction with the 26th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (AdKDD)*, 2020.

5. Masahiro Nomura and **Yuta Saito** (equal contribution). Multi-Source Unsupervised Hyperparameter Optimization. *ICML 2020 Workshop on Automated Machine Learning (AutoML)*, 2020.

6. **Yuta Saito**. Offline Recommender Learning Meets Unsupervised Domain Adaptation. *The first forum for newcomers to ML co-located with NeurIPS (NewInML)*, 2019.

# Work Experience

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| **Jul 2020 - Present** | **Hanjuku-kaso Co., Ltd.** <br> Co-Founder and Director of Science |
| **Apr 2020 - Dec 2020** | **CyberAgent, Inc., AI Lab** <br> Research Partner (outsourcing agreement) |
| **Apr 2020 - Mar 2021** | **SMN Corporation, a.i lab.** <br> Research Partner (outsourcing agreement) |
| **Apr 2020 - Sep 2020** | **Sony Corporation** <br> Research Partner (outsourcing agreement) |
| **Feb 2020 - Present** | **ZOZO Technologies, Inc.** <br> Research Partner (outsourcing agreement) |

## Scholarships and Awards

**2021 -**     **Funai Overseas Scholarship**
**2023**     Doctoral research fellowship by the Funai Foundation (a private foundation in Japan).
    **Granted two full years of tuition plus a monthly stipend of $3,000 for living expenses.**

**2020**     **The SIGIR 2020 Student Travel Grant Program**

## Involved Research Projects

- **Open Bandit Project** (https://github.com/st-tech/zr-obp)
  Open Bandit Project is an open-source research project that aims to enable realistic and reproducible experiments on bandit algorithms and their off-policy evaluation. The project consists of a large-scale real-world dataset called *Open Bandit Dataset* and Python software called *Open Bandit Pipeline*. Awarded **The Prime Minister's Award for Open Innovation by the Japanese Government**.

## Professional Service

### Conference Reviewing

**WSDM:**     2022
**NeurIPS (main track):**     2021
**NeurIPS (datasets&benchmarks track):**     2021
**ICML:**     2021
**AISTATS:**     2021

## Languages

Japanese (native), English (TOEFL iBT: 105)