YUTA SAITO

Phone: (+81)9031151920 ◇ EMail: saito.y.bj@m.titech.ac.jp ◇ Website: https://usaito.github.io

EDUCATION

Tokyo Institute of Technology, Tokyo *Apr 2016 - present*
Bachelor of Engineering
Industrial Engineering and Economics.

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.

PUBLICATIONS (PEER-REVIEWED)

1. **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 ACM International Conference on Web Search and Data Mining (WSDM20), Houston, Texas, USA, Feb. 3-7, 2020 (to appear).

2. **Yuta Saito**, "Unsupervised Domain Adaptation Meets Offline Recommender Learning", NewInML session (co-located with NeurIPS), Vancouver, British Columbia, Canada, Dec. 09, 2019.

3. **Yuta Saito**, Gota Morishita, and Shota Yasui, "Dual Learning Algorithm for Delayed Feedback in Display Advertising". NeurIPS Workshop on Causal Machine Learning, Vancouver, British Columbia, Canada, Dec. 14, 2019.

4. **Yuta Saito**, "Unbiased Pairwise Learning from Implicit Feedback". NeurIPS Workshop on Causal Machine Learning, Vancouver, British Columbia, Canada, Dec. 14, 2019. (**Spotlight Presentation**)

5. **Yuta Saito** and Shota Yasui, "Counterfactual Cross-Validation". ACM RecSys Workshop on Reinforcement and Robust Estimators for Recommendation (REVEAL), Copenhagen, Denmark, Sep. 20, 2019.

6. **Yuta Saito**, Hayato Sakata, and Kazuhide Nakata, "Doubly Robust Prediction and Evaluation Methods Improve Uplift Modeling for Observational Data". In Proceedings of the SIAM International Conference on Data Mining (SDM19), Calgary, Alberta, Canada, May. 2-4, 2019. (**Oral Presentation**)

PREPRINTS

1. **Yuta Saito** and Shota Yasui, "Counterfactual Cross-Validation: Effective Causal Model Selection from Observational Data", *arXiv:1909.05299*.

2. **Yuta Saito**, "Eliminating Bias in Recommender Systems via Pseudo Labeling", *arXiv:1910.01444*.

3. **Yuta Saito**, Hayato Sakata, and Kazuhide Nakata, "Cost-Effective and Stable Policy Optimization Algorithm for Uplift Modeling with Multiple Treatments".

WORK & INTERNSHIP EXPERIENCES

ZOZO Technologies, Inc. *Nov 2019 - present*
Research Internship

· Empirical studies on off-policy evaluation.

Jinch Co., Ltd. *Nov 2019 - present*
Part-time Researcher

· Empirical studies on off-policy evaluation.
· Work with Prof. Yusuke Narita (Yale Univ.).

CyberAgent, Inc. AI Lab *Jun 2019 - present*
Part-time Researcher

· Model selection for causal inference models [RecSys'19 WS]
· Offline learning with delayed feedback data in display advertising [NeurIPS'19 WS]

Nakata Lab, Tokyo Institute of Technology *Apr 2019 - present*
Research Assistant

· Treatment allocation optimization

So-net Media Networks Corp., a.i lab. *Dec 2017 - Sep 2019*
Research Internship

· Unbiased recommender learning from implicit feedback [WSDM'20]
· Offline lift-effect prediction using observational data [SDM'19]

Cancer Scan *Oct 2017 - Feb 2018*
Data Science Internship

· Treatment optimization in health marketing.

PERSONAL RESEARCH PROJECTS

Unsupervised Domain Adaptation Meets Offline Recommender Learning. *2019*

· I constructed a new theory of recommendation with missing-not-at-random feedback using the theoretical framework of unsupervised domain adaptation. The proposed method can alleviate bias and solve the limitations of previously proposed causality-based approaches. [NeurIPS'19 NewInML]

Eliminating Bias in Recommender Systems via Pseudo-Labeling. *2019*

· I applied a well-performing asymmetric tri-training framework in unsupervised domain adaptation to the missing-not-at-random recommendation. I also conducted a theoretical analysis of the strength of the proposed prediction method in the recommendation setting.

Unbiased Pairwise Learning from Implicit Feedback. *2019*

· I developed an unbiased pairwise loss function and a corresponding ranking algorithm. The proposed algorithm empirically outperforms the existing baseline methods, including matrix factorization and Bayesian personalized ranking. [NeurIPS'19 WS]

AWARDS

2nd place: DATA DEMOCRACY DAYS *Apr 2018*
@ Culture Convenience Club Co., Ltd.

· Proposed a relationship app using the matrix completion technique.

COMPETENCES

Programming and Libraries: Python, R, Matlab, SQL, Google BigQuery, LaTeX, Scikit-Learn, Tensorflow, EconML

Languages: English, Japanese