Uthaipon “Tao” Tantipongpipat

Machine Learning Engineer / AI Researcher

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SUMMARY

Machine learning researcher at Twitter in responsible AI / AI ethics. Has driven successful projects (resulting in 3+ billions press click-read) and led company-wide engineers in applying research based on company data. Track record (10+) of top-tier computer science (ML/AI/Statistics) publications. A PhD from Georgia Tech focused on ML theory, optimization, with 1st place award from the US government on differential privacy.

EXPERIENCE

Twitter, remote US - *Machine Learning Researcher* Jun 2020 - PRESENT

- Led Twitter’s image cropping algorithmic bias audit resulting in a published academic paper and $1.5M press ad equivalency and 3B readership from 500 news articles in 49 countries. Led to another follow-up work by team members resulted in additional $1.4M, 2.7B reads, and 800 articles from 47 additional countries, and contributed to the decision to remove the algorithm in production
- Proposed a 13-18% precision-recall video classification model improvement with no additional cost to partnering team to fix offensive misclassifications on Tweet topic annotations, and discovered correlation bias with demographics despite a lack of private individual data
- Established a data-driven guideline for company-wide engineers to adopt a inequality metric in A/B statistical testing, as well as winning business approval with company leadership that finally led to shipping the metric
- Provided statistical analysis to customer teams to evaluate and quantify bias in ML models; redesigned common ML statistical significance tests required for bias measurement
- Mentored a junior researcher
- Published two papers in social computing conference and one in data science journal

Microsoft, Redmond WA - *Research Intern* May 2019 - July 2019

- Implemented privacy guarantee on large-scale natural language processing models (RNNs and LSTMs) to protect against personal deidentification due to model usage
- Developed novel correlation clustering algorithm with corresponding privacy analysis
- Researched private submodular optimization and surveyed literature for private stochastic gradient descent for improving training deep learning models
- Published one paper in the machine learning conference NeurIPS

EDUCATION

Georgia Institute of Technology, Atlanta GA
PhD in Algorithms, Combinatorics, and Optimization (ACO) Aug 2016 - May 2020
Minor in Computational Learning Theory. GPA 4.00/4.00

University of Richmond, Richmond VA
BS in Mathematics, Honors with Thesis (Algebraic Combinatorics) Aug 2012 - May 2016
Minor in Computer Science. GPA 3.97/4.00

University of Oxford, Oxford UK
Study Abroad Program in Mathematics and Computer Science Oct 2014 - Jun 2015

AWARDS

Academic:

- **Impact Recognition** Award, CSCW (the social computing conference) 2021
- ACO **Outstanding Student** Award (best PhD student in the year at the graduation) 2020
- **Best Reviewers** of NeurIPS (top-tier machine learning conference) 2019
- **Full-merit** 4-year scholarship for tuition and living expense, University of Richmond 2012 - 2016

Competitions:

- **1st Prize** Award and **People's Choice** Award ($20,000 total), The Unlinkable Data Challenge, National Institute of Standards and Technology (NIST), US Department of Commerce 2018
- **Finalist**, Tech Challenge programming competition, Illinois Technology Association, IL 2016
- **2nd Place**, ICPC Mid-Atlantic USA Regional Contest, Christopher Newport University 2015
- **Honorable Mention** (top 2.5%), William Lowell Putnam Mathematical Competition 2015
- **Bronze Medal** and **Honorable Mention**, Asia-Pacific Mathematics Olympiad (APMO) 2010, 2011
- **Gold** and **Bronze Medals**, IWYMIC International Mathematics Competition 2008, 2009

PUBLICATIONS

I have 11 peer-reviewed published papers, mainly in top-tier CS venues (such as NeurIPS, COLT, SODA). Topics include machine learning, responsible ML (fairness in ML), differential privacy, fairness, algorithms/theory, statistics, and Human-Centered Interaction (HCI)/Social Computing. My website www.uthaipon.com or Google Scholar has full details.

SKILLS

Technical: Responsible AI, model audit / model governance, cross-functional communications, differential privacy, statistics. Python, Java, C++, SQL (BigQuery), Pytorch, pandas, numpy, scipy, Git, CVXOPT, MATLAB, Mathematica, LaTeX

Languages: Thai (native); English (full proficiency)