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# Uthaipon “Tao” Tantipongpipat

## Machine Learning Engineer / AI Researcher

Orlando, FL, US

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<https://www.linkedin.com/in/uthaipon/>

### SUMMARY

Machine learning researcher at Twitter. Has driven successful fairness in AI/HCI projects (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 resulted in the production change to remove the algorithm
- 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

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## 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

Thesis: Fair and Diverse Data Representation in Machine Learning

### 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, differential privacy, fairness, algorithms/theory, statistics, and HC/Social Computing. My website [www.uthaipon.com](http://www.uthaipon.com) or [Google Scholar](https://scholar.google.com/citations?user=...) has full details.

## SKILLS

Technical: Python, Java, C++, SQL (BigQuery), Pytorch, pandas, numpy, scipy, Git, CVXOPT, MATLAB, Mathematica, LaTeX, MS Office

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