Andy C Lee

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EDUCATION

University of Illinois Urbana-Champaign — Urbana, IL
PhD Computer Science — GPA 3.84 – Expected December 2027
MS Computer Science — GPA 3.81 – May 2023
BS Mathematics and Computer Science; Economics — GPA 3.65 – May 2016

RESEARCH AND WORK EXPERIENCE

University of Illinois Urbana-Champaign — Urbana, IL
Graduate Researcher — August 2021 - Present
Mechanism for attention allocation in social networks (Working paper, preprint available):

- Introduced novel auction based mechanism for allocating scarce attention on social media.
- Produced 36% higher producer welfare and distributed attention more equitably.

Algorithm for robust team formation under preference uncertainty (Working paper):

- Evaluated stochastic precedence based optimization for objective prioritization under preference uncertainty.
- Solved multi-objective optimization 14% better than strongest prior work.
- Theoretically demonstrated how to modify solutions to be robust to local coalitions using novel stability concept.

Community formation with boundedly rational, resource constrained agents (In submission, preprint available):

- Developed behavioral model of community formation, fits empirical networks 21% better than strongest prior work.
- Proved that network must converge to stable community structure.
- Demonstrated via ablation studies that behavioral constraints are necessary, unconstrained models fit worse.

Sandia National Labs — Albuquerque, NM
Graduate R&D Intern — June 2024 – August 2024

- Developed covariance intersection and bandit algorithms for multi-sensor tracking and triangulating objects.
- Determined geometric factors influencing performance of different optimization methods and algorithms.
- Published Sandia report "Analysis of Covariance Intersection For Triangulation", available via OSTI

Facebook — Seattle, WA
Data Engineer, Analytics — July 2020 – August 2021

- Developed and designed datasets, metrics, and monitoring for petabyte scale data privacy and advertising signals.
- Datasets, pipelines, and tooling were used for tracking almost all advertising revenue and attribution from third parties.
- Collaborated with data science, engineering, and research to model and predict advertising and user behavior.

PROJECTS

- Created a model of cooperation between cancer clones; showed how population interventions lead to population collapse.
- Developed linear programming method for minimizing error ratios in piano tuning to find optimal temperament.
- Predicted the McRib returning via pork commodity prices; used logistic regression to identify most predictive features.

ADDITIONAL

Publications: "Firefighting on the Hexagonal Grid" in Discrete Applied Mathematics, additional preprints and working papers available at anandyclee.com
Teaching: Discrete Structures, Intro to CS, Data Structures and Algorithms
Other work experiences:

- **Viasat Engineering Intern** - Developed tool for managing data pipelines (Summer 2018)
- **Facebook Data Engineering Intern** - Developed auditing tools and automation for earnings call (Summer 2019)

Skills: Python, numpy, SQL, PyTorch, scikit-learn, gymnasium, pandas, optimization, numerical methods, stochastic processes, mechanism design, algorithmic game theory, mathematical modeling
Academic honors: Outstanding TA Spring 2025, Wing Kai Cheng Fellowship 2023