ANDY C LEE

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EDUCATION

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

BS: Mathematics and Computer Science; Economics
May 2020 | GPA: 3.65

MS: Computer Science
May 2023 | GPA: 3.81

PhD: Computer Science
May 2027-28 | GPA 3.84

PROJECTS

> Developed model of cooperative games in fungal and tumor networks
> Developed optimization method to minimize error in piano tuning
> Used pork future prices to predict likelihood of McRib returning

SKILLS

> **Programming languages:** Python, C/C++, some Haskell
> **Natural languages:** English native, Chinese heritage speaker, B2 French
> **Data tools:** pytorch, tensorflow, sklearn, pandas/numpy/scipy stack, networkx
> **Databases:** SQL, redis, SQLAlchemy

TEACHING

> TA for intro math for CS, data structures, CS for non-majors
> Research judge in FIRST Lego League robotics tournament, mentored high school team.

ACADEMIC HONORS

> James Scholar
> High Distinction in Math and Computer Science
> Dean's List Spring 2020
> IGL Research Award 2021
> Wing Kai Cheng Fellowship 2023

RESEARCH INTERESTS

- Modeling and simulating environments where agents have complex, heterogeneous preferences and behaviors.
- Using algorithmic game theory and mechanism design to create robust algorithms for supporting decision making.
- Applying machine learning to enhance algorithms under uncertainty and complexity.

RESEARCH AND WORK EXPERIENCE

GRADUATE RESEARCHER | UIUC

August 2021 - Present

- Developing mechanism for attention allocation in social networks (WIP).
  > Novel system of prioritizing and managing attention on social networks using auctions.
  > Developed RL system for interventions on feeds to meet content producer and consumer objectives.
- Developed algorithm for robust team formation under uncertainty.
  > Created and evaluated genetic algorithm with novel application of stochastic dominance optimization criteria for forming teams.
  > Mechanism is robust to uncertainty in objective prioritization.
  > Found allocations are maximally satisfying for workers and managers.
  > Theoretical work finished, human subjects work in progress.
- Developed model of community formation with boundedly rational, resource constrained agents.
  > Used simulation and empirical data to show that the model produces networks that are qualitatively similar to observed social networks.
  > Proved convergence of model to stable network.
  > Demonstrated via ablation studies that strong fit to data is due to bounded rationality of agents.
  > Available on arxiv. Expanded work being prepared for submission.

GRADUATE R&D INTERN | Sandia National Labs

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 Office of Scientific and Technology Information.

DATA ENGINEER, ANALYTICS | Facebook

July 2020 - August 2021

- Developed and designed datasets, metrics, and monitoring for data privacy and advertising signals.
- Collaborated with partners in data science, engineering, and research to understand advertising performance and user behavior.
- Focused on privacy while maintaining high quality signals.

OTHER EXPERIENCES

Illinois Geometry Lab Published paper "Firefighting on the Hexagonal Grid" in Discrete Applied Mathematics.
Facebook Data Engineering Intern Developed auditing for user growth data and automated earnings call reporting deck.
Viasat Engineering Intern Developed tool for visualizing and managing jobs in data pipeline.