ANDY C LEE

https://www.github.com/andyclee | https://www.linkedin.com/in/anandyclee | andy2@illinois.edu | +1 (626)560-8299

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 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, rudimentary French
> **Data tools:** pytorch, tensorflow, sklearn, pandas/numpy/scipy stack, networkx
> **Databases:** SQL, redis, SQLAlchemy

TEACHING

> TA for CS173, CS225, and CS105
> Research project judge in FIRST Lego League childrens' 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 decision making.
- Applying machine learning to enhance simulations and algorithms under uncertainty.

RESEARCH AND WORK EXPERIENCE

GRADUATE RESEARCHER | UIUC

August 2021 - Present

- 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 this accuracy is due to the constrained nature of agents.
- Developed and evaluated mechanisms for facilitating collaborative work, covering group formation, task allocation, and peer grading.
  > Evaluated mechanisms via simulation against baselines to understand their strengths and weaknesses in plausible schemes of student preferences.
  > Proved efficiency and truthfulness of algorithms.
- Developed model of resource exchange between trees.
  > Created game theoretic model of resource exchange between heterogeneous trees.
  > Utilized simulations to show equilibrium species proportions in networked model of forest with and without resource exchange.
  > Showed theoretically what conditions lead to cooperation and what conditions lead to competition.

GRADUATE R&D INTERN | Sandia National Labs

June 2024 - August 2024

- Developed algorithms for multi-sensor tracking and triangulating objects.
- Determined contexts influencing performance of different optimization methods and algorithms.
- Published Sandia report "Analysis of Covariance Intersection", 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 Co-wrote and published paper "Firefighting on the Hexagonal Grid" about spread on graphs.
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.