David Lin
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Education

M.S., Cornell University, Ithaca, NY   August 2024 – present
Computer Science

B.A., Cornell University, Ithaca, NY   August 2019 – May 2023
Mathematics, Magna Cum Laude
Computer Science, Summa Cum Laude

Research Experience

Algorithms research advised by David Shmoys   Fall 2021 – Spring 2023
- Explored learning-augmented online algorithms for interval scheduling problems.
- Explored linear programming-based approximation algorithms for interval covering problems.
- Explored linear programming formulations for the capacitated facility location problem and their integrality gaps.

Human-computer interaction research advised by Cheng Zhang   Spring 2020 – Spring 2021
- Explored implicit user interest on mobile device grid interfaces. Created a mobile application that collects users' explicit ratings of photos in addition to touch and motion sensor data in the background. Found that sensor time-series data can predict users' ratings of photos from tilting and scrolling patterns in a preliminary study.
- Explored detecting which hand(s) a user is holding a mobile device with. Used body silhouette images taken from the front-facing camera in machine learning models to predict the hand(s) with high accuracy. Demonstrated that the models can run in real-time and continuously update the prediction as the user changes hand(s) by running it on a commodity smartphone.

Teaching Experience

Teaching Assistant at Cornell University
- CS 2800: Mathematical Foundations of Computing   Spring 2025
- CS 4830: Introduction to Cryptography   Fall 2024
- CS 2802: Discrete Structures - Honors   Fall 2020, Spring 2023
- CS 4820: Introduction to Analysis of Algorithms   Fall 2021, Fall 2022
- CS 2800: Discrete Structures   Spring 2021, Spring 2022

Industry Experience

Software Engineer, Google   July 2023 – August 2024
- Built user-facing augmented reality experiences.

Software Engineering Intern, Google   Summer 2022
- Built user-facing augmented reality experiences.

Software Development Engineering Intern, Amazon   Summer 2021
- Built tools to trace Amazon API Gateway requests.

Publications

- Hyunchul Lim, David Lin, Jessica Tweneboah, and Cheng Zhang. Handytrak: Recognizing the holding hand on a commodity smartphone from body silhouette images. In *The 34th Annual ACM Symposium on User Interface Software and Technology*, pages 1210–1220, 2021

Awards and Honors

- Degree Marshall for the College of Arts and Sciences at Cornell University, 2023
- Dean's List in the College of Arts and Sciences at Cornell University, Fall 2020 – Spring 2023
- Top 500 in the William Lowell Putnam Mathematics Competition, 2022
- Phi Beta Kappa Honor Society, Theta Chapter of New York at Cornell University, 2022