# Connor Mowry

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## EDUCATION

### UNIVERSITY OF ILLINOIS
PhD in Computer Science
Urbana-Champaign, IL
Advisors: Chandra Chekuri, Karthik Chandrasekaran
Cum. QPA: 4.0

### CARNEGIE MELLON UNIVERSITY
BS in Computer Science
Concentration in Algorithms and Complexity
Graduated May 2025 | Pittsburgh, PA
Cum. QPA: 3.81

## SKILLS

### PROGRAMMING LANGUAGES
C/C++ ● Python ● OCaml ● C# ● Java
Javascript/Typescript ● HTML & CSS

### TOOLS & FRAMEWORKS
CUDA ● OpenMP ● MPI ● ISPC ● Play
Docker ● Flask ● React Native ● Git
PostgreSQL ● Bootstrap ● Bash ● LaTeX ● Vim

## PUBLICATIONS

Jason Li, **Connor Mowry,** Satish Rao. "Faster Negative-Weight Shortest Paths and Directed Low-Diameter Decompositions" SODA 2026.

Giacomo De Palma, Marco Fanizza, **Connor Mowry**, Ryan O'Donnell. "Non-iid hypothesis testing: from classical to quantum." QIP 2026.

## COURSEWORK

**Graduate:** Randomized Algorithms, Computational Complexity, Spectral Graph Theory, Advanced Algorithms
**Undergraduate:** Undergrad Complexity Theory, Undergrad Quantum Computation, Algorithm Design & Analysis, Computational Discrete Math, Probability & Computing

## RESEARCH INTERESTS

Graph algorithms, network optimization, connectivity problems, combinatorial optimization

## EXPERIENCE

### MICROSOFT | Software Engineer Intern
May 2019 – Aug 2019 | Cambridge, MA
- Implemented feature using C# and Typescript allowing IT admins to prevent users from removing or wiping corporate managed devices.

### CARNEGIE MELLON UNIVERSITY | Teaching Assistant
Jan 2019 – May 2019 | Pittsburgh, PA
- Led weekly recitations for ∼20 students, held office hours, co-created new labs, and graded for Data Structures and Algorithms (15-210).

### SEI (CMU) | Software Engineer Intern
May 2018 – Aug 2018 | Pittsburgh, PA
- Built from scratch a Java Play Framework web application to easily configure and monitor the security state and data of IoT devices.

## PROJECTS

### PARALLELIZING DINIC'S ALGORITHM
Fall 2024 | 15-418: Parallel Computer Architecture and Programming
- Parallelized Dinic's max-flow algorithm using OpenMP and MPI, achieving significant speedups on large graphs through BFS optimizations and 1D/2D graph decomposition.

### SAT SOLVER
Fall 2024 | 15-354: Computational Discrete Mathematics
- Implemented a SAT solver in C++ with DPLL and heuristics (e.g., DSIDS, DLIS, MOMS), evaluating performance across traceable and computationally intensive test cases.

## RESEARCH

### UNIVERSITY OF ILLINOIS | PhD Researcher
Aug 2025 – Present | Urbana-Champaign, IL
- Studying element connectivity reduction and Gomory-Hu tree construction with Prof. Chandra Chekuri and Prof. Karthik Chandrasekaran.
- Investigating whether recent polylogarithmic max flow algorithms for Gomory-Hu trees can be extended to element connectivity.

### CARNEGIE MELLON UNIVERSITY | Undergrad Researcher
Apr 2024 – August 2025 | Pittsburgh, PA
- Worked with Prof. Jason Li on the negative-weight single-source shortest paths problem. Our work was later combined with a new directed low-diameter decomposition result to obtain a nearly log-factor improvement over the state-of-the-art.
- Presented at SODA 2026.

## ACTIVITIES

### SCOTTYLABS | Director of Technology
Aug 2018 – May 2019
- Directed technical projects and organized TartanHacks, CMU's largest hackathon with 400+ participants.