Robyn Burger

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Education

Cornell University, M.S. Computer Science Aug '25 – May '27
- Thesis-based program, advised by Paul Golz and Siddhartha Banerjee
- **Research topics:** optimization, applied math, data science, algorithmic game theory

Cornell University, B.A. Mathematics, B.A. Computer Science Aug '22 – May '25
- GPA: **3.68**/4.0 *(cum laude)*
- **Coursework:** AI, Randomized Algorithms, Object-Oriented Programming, Data Structures
- **Technical Skills:** Python, Java, OCaml, C, Ruby, SQL, Javascript, Jira, GitHub, Unix, LaTeX, HTML

Experience

Head TA, CS 2800: Discrete Math, Cornell University Spr '23, '24, '25, Fall '23, '25
- Leads 300-student review lectures, teaches 25-student discussion sections
- Creates rubrics for exams, homework and leads team of 10 TAs through grading
- Recipient of department-wide TA excellence award

Algorithms Researcher, Montana State University REU May - Aug '24
- Created integer linear program in Python (Gurobi, NumPy, Pandas) to reconstruct phylogenetic trees of tumor samples
- Built group-testing suite based on real and simulated data of leukemia patients

Agile Backend Software Engineer, SC Johnson School of Business IT, Cornell University May – Aug '23
- Spearheaded modernization of legacy PHP into scalable Ruby on Rails, ensuring security and reliability
- Collaborated with team in daily stand-up meetings to implement client feedback across multiple Agile programs

Financial Data Fellow, Imani Oakley for Congress Aug – Nov '21
- Analyzed campaign finance data (6-figure budget) and donor database to advise on optimization of financial strategies

Publications and Presentations

EssentCell: Discovering Essential Evolutionary Relations in Noisy SCS Data [PDF] [Git] May '24 - Sept. '25
- Published IEEE/ACM TCBB '26, Presented at RECOMB-CCB '25

Approximating the Longest k-Repeated Subsequence (LKRS) [PDF] Sep '24 - Aug '25
- Presented independent research at University of Michigan Theory Seminar (12/24)

Scholarly Work

Allocation of Scientific Credit with Altruistic Players [PDF] Dec '24
CS 6840 Graduate Algorithmic Game Theory, Professor Eva Tardos
- Incorporated altruism into Kleinberg–Oren credit allocation model, deriving new PoA bounds in special cases
- Optimized algorithm to near-optimal allocations with 42% welfare improvement in simulations

Optimizing PrivGraph [PDF] [Git] Dec '23
CS 6850 Graduate Information Networks, Professor Jon Kleinberg
- Optimized existing differential privacy algorithm with added support for concurrent testing of generated datasets
- Using multiple linear regression (MLR), found a median of 13% improvement across chosen graph metrics

OCaml Linear Algebra Library [Git] Spr '23
- Created library of functions to support matrix/vector operations and created U/I interface.

Leadership and Service

President, Association of CS Undergraduates (Cornell ACM Chapter) Fall '23 - Spr '24
- Oversaw all functions of largest club at Cornell (500+ active members)
- Managed subteams' progress on concurrent projects, proposed and executed events
- Collaborated with CS dept., alumni, and students to ensure alignment with common goals

President, Triphammer Coop Fall '24 - Spr '25
- Managed logistics of 20-person, student-governed residence
- Liaised with university and city to ensure compliance and effective representation of member interests

Instructor, Cornell Outdoor Ed. Teaches 16-student courses in rock climbing and backpacking Spr '23 - Fall '25
Vice President, Whistling Shrimp Improv Comedy Planned logistics of monthly comedy shows Fall '22 - Spr '23

Awards

Jonathan E. Marx Memorial Senior Prize: Awarded to two graduates for outstanding leadership May '25
Sphinx Head Honors Society: One of 40 seniors invited to Cornell's oldest senior honors society Fall '24 - Spr '25
Most Impactful Student Award: Given by Cornell CIS DEIB office Apr '24