Matan Kotler-Berkowitz

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EDUCATION

University of Rochester — **Rochester, NY**
Bachelor of Science, Computer Science. Bachelor of Arts, Political Science   *Expected May 2025*
- GPA 3.93 out of 4.00. Dean's List all eligible semesters.
- Expected Honors in Computer Science and Honors in Political Science

EXPERIENCE: Internships

CommonLit — **Washington, DC**
Software Engineering Intern   *May 2023 – August 2023*
- Implemented security requirements to comply with the SOC-2 audit, including integrating OAuth into the organization-wide admin dashboard and location- and role-based controls on data access.
- Fixed security vulnerabilities leaking sensitive educational information.
- Designed and implemented application-wide automated accessibility testing.

JusticeText — **Boston, MA**
Software Engineering Intern   *May 2022 – August 2022*
- Engineered highly-requested features and bug fixes for the JusticeText platform, an evidence-management software for public defenders, including scalable search reindexing, edit history and backups, streamlined notifications, and user payment history.

Red Hat — **Boston, MA**
Software Engineering Intern   *May 2021 – August 2021*
- Implemented key features for ChRIS, a medical technology application, and Mass Open Cloud Curator, a public cloud computing platform, including a graphical interface to simplify data processing pipelines, browser-based viewers for medical data files, and server usage visualizations.

Citizens for Juvenile Justice — **Boston, MA**
Policy and Research Intern   *January 2021 – May 2021*
- Conducted research, data analysis, and visualization, and policy writing on juvenile justice and other youth-focused issues.
- Co-authored report on non-police responses based on analysis of Boston community incident data.
- Discovered a duplication error in the Boston Police Department's incident data that caused significant overreporting of incidents, leading to a Boston City Council hearing at which I testified alongside staff at CfJJ, the ACLU of Massachusetts, as well the City of Boston Director of Technology and PD officials.
- Wrote software to automatically parse and format Boston Department of Children & Families data, saving hundreds of hours of annual work.

Anti-Defamation League — **Boston, MA**
Advocacy and Research Intern   *September 2020 – December 2021*
- Worked on a wide variety of tasks and projects, including legislative advocacy on issues around police reform and digital harassment; anti-bias and anti-bullying education; legal, policy, and other research; and communications.

EXPERIENCE: University of Rochester

Computational Social Choice Research Group — **Rochester, NY**
Research Assistant   *September 2023 – Present*
- Worked under Professor Lane A. Hemaspaandra on research in Computational Complexity and Computational Social Choice.
- Collaborated with a team of graduate and undergraduate students on two critiques of scientific papers, which explore the relationship between constraint satisfaction problems, boolean satisfaction problems, and the polynomial hierarchy.

Political Science Department — **Rochester, NY**
Teaching Assistant   *January 2023 – May 2023*

- Led recitation group for Argument in Political Science course, met with students individually to teach course material.
- Collaborated with undergraduate TAs and Professor Gerald Gamm to grade papers and manage class logistics.

Horizon Research Lab   **Rochester, NY**
Research Assistant   *January 2022 – May 2023*
- Engineered an interactive virtual reality viewer for Resurrect3D, a browser-based modeler.
- Integrated and extended a raytracing-based neighbor-search algorithm with Triforce, a physics simulation engine.

RocLab (Student-Led Software Consultancy)   **Rochester, NY**
Full-Stack Software Engineer   *January 2023 – May 2023*
- Architected key features for Unicycle, a campus-based e-commerce platform, including responsive mobile designs for main application pages, listing editing and reporting, and views tracking.

Computer Science Department   **Rochester, NY**
Teaching Assistant   *January 2023 – May 2023*
- Led workshop group for Data Structures and Algorithms course, teaching topics including asymptotic analysis, recursion, dynamic programming, graphs, trees, and other data structures.

EXPERIENCE: Freelance

OBR Investing   *April 2023*
Freelance Software Engineer
- Identified and fixed software errors in a Discord bot that prevented new customers from signing up.

Torah Godly Play   *November 2022 – December 2022*
Freelance Web Designer
- Created a 15-page Squarespace website, managed domains and payments

AndrewPessin.com   *May 2021 – June 2021*
Freelance Web Developer
- Designed and developed a custom WordPress website for author Andrew Pessin.

Gabe's Bar Mitzvah Website   *May 2021 – June 2021*
Freelance Web Developer
- Designed and developed a single-page invitation website for a Bar Mitzvah Event.

Mind App   *February 2022 – May 2022*
Freelance Mobile App Developer
- Engineered new features and bug fixes for Mind App, a React Native-based athlete mental health tracking app.

Riverside Lactation Center   *April 2021*
Freelance Software Engineer
- Engineered backend solution to parse, format, and deliver custom patient form data to medical specialists.

Programming Tutoring   *Fall 2020*
Freelance Software Engineer
- Planned and taught one-on-one tutoring sessions for middle schoolers, focusing on web design and development

Harlow Group   *June 2016 - August 2016*
Freelance Systems Administrator
- Migrated two websites to HTTPS by installing SSL certificates and transitioning WordPress installations.

Temple Beth Shalom   *May 2019 - June 2019*
Freelance Software Engineer
- Migrated two websites to HTTPS by installing SSL certificates and transitioning WordPress installations.

Family Law Software *May 2017 - June 2018*
Freelance Web Developer & Email Marketer
- Designed and developed a modern, responsive redesign of a public-facing website with dozens of pages.
- Integrated modern technology with legacy backend.
- Created an email marketing campaign of twenty emails; wrote marketing text, designed email layout, and managed a database of email addresses.

EXPERIENCE: Volunteer

RagTag *January 2021 - May 2021*
Volunteer Web Developer
- Implemented key components for a custom Wordpress theme for FreeFrom, a domestic-violence victims support organization.

Jewish Community Day School of Boston *June 2019 – December 2021*
Volunteer Educator & Technology Consultant
- Designed and co-taught a two-year middle-school elective programming course. Created instructional material and led students through the conceptualization, design, and implementation of programming projects.
- Created custom technology solutions for attendance sheets, report card parsing, and other school administration requirements.
- Provided technical support and consultation for virtual-reality learning experiences.

Code for Boston *May 2020 – September 2020*
Volunteer Software Engineer
- Worked with a team of volunteers to contribute new features and bug fixes to the Social Security Benefit Calculator, a civic technology project backed by Congressman Seth Moulton.

Code for Social Good *April 2017 – December 2018*
Volunteer Software Engineer
- Contributed to a WordPress website encouraging young women to explore computer science; created custom pages, managed plugins, users, WordPress installations, database configurations, and domains.

Association for the Social Scientific Study of Jewry *March 2018 – May 2018*
Volunteer Software Engineer
- Designed and built a new website for the organization, migrating all content from the previous website and integrating with a legacy backend.

PROJECTS

Mock Trial Timekeeper React Native mobile application with over 1,200 users, which simplifies and automates a core part of collegiate mock trial tournaments.

Mock Trial Rules of Evidence SwiftUI mobile application with over 900 users, with features including content-aware search and dynamically updated information.

MyGann+ A browser extension that adds over thirty new features to Gann Academy's learning management system, used by over 90% of students and numerous faculty.

Unicycle Worked with a four-person development team to create a campus-based e-commerce web application with over 75 users.

T'Feeling A web application which encourages people to make, share, and be inspired by connections between t'fillot (Jewish prayers) and their emotions. Winner of honorable mention, Powered by Sefaria Contest 2020.

Drive Organizer A web application which enables users to rapidly organize files in Google Drive.

LEADERSHIP EXPERIENCE

University of Rochester Mock Trial **Rochester, NY**

- Vice President (2023-2024): Supported the president and the executive board in accomplishing the competitive, educational, and social goals of the seventy-member, nationally-ranked organization.
- Team Captain (2023-2024): Co-captained two teams through four competitions. Led weekly practices, education for new members, and competitive strategy.
- Tournament Director (2022-2023): Organized 250+ person tournament, managing dozens of team members and volunteers.

Gann Academy Red Curtain Drama Club   **Waltham, MA**
- Technical Director (2019-2020): Recruited and oversaw all crew members for two theater productions; helped organize and lead weekly club meetings.

PUBLICATIONS

Yumeng He, Matan Kotler-Berkowitz, Harry Liuson, and Zeyu Nie, "Disproving 'A polynomial time algorithm for 3-SAT'". ArXiv, 2023.

Michael Chavrimootoo, Yumeng He, Matan Kotler-Berkowitz, Harry Liuson, and Zeyu Nie, "Evaluating the Claims of 'SAT Requires Exhaustive Search'". ArXiv, 2023.

Matan Kotler-Berkowitz and Elijah Wiesman, "Inconsistent With Youth: Equal Protection, Cruel and Unusual Punishment, and the Issue of the Incorrigibility Standard". University of San Francisco Law Review Forum, 2020.

Joshua Dankoff and Matan Kotler-Berkowitz, "Too Blue: A Vision for Non-Police Responses to Community Incidents in Boston". Citizens for Juvenile Justice, 2020.

TECHNICAL SKILLS

HTML, CSS, JavaScript, TypeScript, ReactJS, React Native, NodeJS, Java, Ruby on Rails, PostgreSQL