# Kyla Levin

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## EDUCATION

**M.S. / Ph.D. Computer Science, Advisor: Emery Berger** Expected: May 2028
University of Massachusetts Amherst, Amherst, MA
GPA: 3.92
Relevant Coursework: Compilers, Secure Distributed Systems, Adv. Algorithms, Neural Networks

**B.S. Computer Science and Chemical Engineering** May 2023
Tufts University, Medford, MA
GPA: 3.67

## SKILLS

**Programming Languages:** C++, C, Java, Python, HTML5, JavaScript, Ruby

**Software programs:** OpenAI, GDB, LLDB, PDB, Undo.io, Docker, Eclipse, Adobe, Git, Linux OS, LaTeX

## RESEARCH

**Graduate Research Assistant** Sep 2023 – Present
PLASMA Lab, University of Massachusetts Amherst

- *ChatDBG:* Developing a new debugging tool to converse with large language models, such as ChatGPT, to reduce user involvement and make conventional debuggers more accessible to software developers. Currently investigating upgrading *ChatDBG* into a reverse debugger through Undo.io. Available on ArXiv: https://arxiv.org/pdf/2403.16354
- *Pythoness:* A tool that uses LLMs to automatically generate rigorous and efficient code through natural-language descriptions and tests. Currently expanding an automatic testing framework that creates and runs unit tests, property-based tests, class constraints, and integration tests on generated code.

**Undergraduate Research Assistant** May 2022 – May 2023
The Foster Lab, Tufts University, Computer Science Dept.

- Developed REST$_\pi$, a novel path-sensitive type inference system that elevates REST API documentation generation by accurately capturing the relationship between API input and application and its output.
- Analyzed the quality of REST API specs created with REST$_\pi$ implemented for Ruby built on *RDL*, an existing type-inferencing tool, against publicly used documentation software such as SwaggerHub and Postman.
- Wrote a sample REST API using Ruby on Rails and documented its API spec both manually and through an automatic OpenAPI generation software.

**Laidlaw Scholar Undergraduate Research Assistant** Jun 2021 – Sep 2021
The Cowen Lab, Tufts University, Computer Science Dept.

- Assisted on a graduate project on using protein networks to locate causal genes for Parkinson's Disease and programmed modules that could execute an efficient graph-searching algorithm to traverse protein nodes. Published "Neighborhood embedding and re-ranking of disease genes with ADAGIO" with Mert Erden and Lenore Cowen and presented at ACM-BCB 2022. https://doi.org/10.1145/3535508.3545542
- Discussed research and career paths with computational biology experts to introduce undergraduate students to the field and encourage their outreach for possible research opportunities.

## WORK EXPERIENCE

**Littauer Library Student Assistant Programmer** May 2023 – Aug 2023
Harvard University Widener Library, Judaica Division

- Performed tech stack development on the Judaica Division's digital collection of 8M+ records in FileMaker.
- *Front end:* Designed new web interfaces and organized a database architecture that optimized the accessibility of database navigation for people across various programming backgrounds and languages.
- *Back end:* Wrote compilation programs to better visualize collection statistics, analyze the data, and print the results into comprehensive reports.

**Intelligence Team Intern** Jul 2022 – Sep 2022
Tortoise Media

- Refined a natural-language processing algorithm to scrape public financial data from government websites and process the data into a machine learning model that could detect unusual trends in donors or amounts being spent.
- Wrote a clustering algorithm to group together donor and MP names with similar names and titles.
- Organized the company's subscriber lists and access codes in Excel in collaboration with the Partnerships team.

## ACADEMIC EXPERIENCE

**Teaching Assistant – Introduction to Computation** Sep 2023 – Dec 2023
University of Massachusetts Amherst, Manning College of Information and Computer Sciences

- Guided students through peer-to-peer learning by leading weekly discussions and lab sessions, as well as responding to student questions and concerns both in office hours and online through Piazza and on Zoom.
- Evaluated and graded assignments, projects, and exams using established rubrics, providing detailed and constructive feedback to help students improve their understanding of machines and computation.

**Academic Tutor** May 2022 – May 2023
Varsity Tutors

- Provided hourly coaching in a wide variety of computer science, chemistry, math, and general education subjects.
- Created my own materials to help students from middle school to adult learners develop new programming skills with no prior experience, **improve standardized test grades, or study materials for a class.**

**Teaching Assistant – Cryptography and Discrete Mathematics** Aug 2020 – May 2023
Tufts University, Computer Science Dept.

- Wrote administrative programs in C++ to help lecturing faculty with organizing grades and student data.
- Graded and reviewed feedback on all student homework assignments and exams for classes of 160+.
- Answered student inquiries and provided a collaborative learning environment through office hours.