Jacob Kline

Available starting July 2025

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Technical Experience

Full Stack Software Engineering Co-op
Jul. 2023 – Dec. 2023

Wood Mackenzie - Boston, MA

- Completed feature work for a Typescript web application with React frontend and GraphQL/ElasticSearch backend
- Researched and designed implementation plan to integrate a nascent user product into a legacy Typescript API
- Wrote and maintained new ElasticSearch & GraphQL schemas and queries that enhanced data interaction efficiency across 15+ datasets
- Collaborated with global software teams, communicating across functions, during implementation which ensured zero downtime for existing products throughout deliverable timeline
- Finalized implementation of new user product within all deadlines enabling company to bring in 4 new partnerships

Software Engineer
Jun. 2023 – Dec. 2023

Generate Product Development Studio - *Cait's Curaits* - Boston, MA

- Designed and implemented a React and Go-based gift-curator application which nearly doubled existing customer base
- Developed a backend system from the ground up for managing user requests and curator suggestions, ensuring data integrity
- Created 3 user roles for effective site moderation which enabled the hiring of new full-time moderation staff

Projects

ViPER Compiler and Programming Language - Repository
Jan. 2025 - present

- Designed and implemented an x86_64 compiler for a functional programming language in OCaml with a C runtime
- Implemented features such as first class anon. functions, mutable recursive tuples, exception handling, garbage collection, register allocation, etc.
- Iteratively added new language features beginning with semantic specifications and reasoning about effects on each phase of the compiler pipeline

North Star - View Live Site | Repository | Case Study
Sep. 2024 - Dec. 2024

- Implemented space-themed Q&A MERN stack web app sustaining 150+ users, authenticated via Firebase. Development ongoing
- Streamlined communication among 4 engineers using AGILE model, completed 6 research stories and 12 new features in 5 week deliverable timeline
- Designed and deployed a MongoDB cluster with 7 collections for secure, scalable data storage, leveraging server-side logic
- Streamlined data validation by developing MongoDB middleware functions, automating 5+ recurring database requests
- Maintained an existing CI/CD pipeline, built 1 new pipeline using GitHub Actions, ensuring 0 downtime during schema migrations

SNAPpy - Repository
Feb. 2023 – May 2023

- Developed web app for MA SNAP program participants during HackBeanpot hackathon, optimizing for low-bandwidth environments
- Leveraged Django and JavaScript to create user-friendly interfaces, with emphasis on accessible technologies and tech illiteracy
- Built 4 API pipelines in Python to efficiently process grocery store and Google Maps data on the back-end to lessen load on user hardware

Facilitation and Leadership Experience

Sexual Violence Prevention Educator, Northeastern University - Boston, MA
Sep. 2024 – present

- Led 8+ comprehensive bystander intervention and sexual violence prevention presentations per semester, reaching 350+ freshmen
- Presented 4+ specialized sexual violence prevention programs to Fraternity and Sorority Life organizations per semester, each for 75+ members

Vice President, Northeastern Sexual Health Advocacy, Resources, and Education - Boston, MA
Sep. 2021 – present

- Led weekly meetings for 30+ students on interpersonal communication, boundary setting, and healthy relationship development
- Advocated for accessible sexual health resources, securing an 88% markdown on essential products
- Partnered with university administrators and 2 student groups to bring 2 new medical procedures to university health center

Education

NORTHEASTERN UNIVERSITY, Boston, MA
Expected Spring 2025

Khoury College of Computer Sciences

Bachelor's degree in Computer Science, Pre-Med Track
GPA: 3.74/4.0

Relevant Courses: *Software Engineering, Graduate Algorithms and Data, Web Development, Accelerated Fundamentals of Computer Science I & II, Object-Oriented Design, Networks and Distributed Systems, Theory of Computation, Compilers*

Skills and Programming Languages: *TypeScript, React.js, MongoDB, Firebase, Express.js, Axios, Node.js, Python, Java, Racket, HTML5, CSS3, MySQL, C♯, GraphQL, Django, Git, Vim, Docker, Jenkins, ElasticSearch, AWS, MediaPipe*

Awards, Activities, and Interests

Northeastern University: Recipient of the 2025 Graduating Student Award
Northeastern Hillel: Recipient of the 2025 Sidney Herman Student of the Year Award
HackBeanpot 2023: Winner for 'Most Impactful Project on Boston Community' (SNAPpy)
White Hall Hackathon: Second place (Visual ASL Interpreter)
Spoken Languages: Hebrew (*CEFR: C1*), Arabic (*CEFR: B1*), Mandarin (*CEFR: A2*)
Interests: Open source development, algorithm optimization, chess, language learning, improv & stand-up comedy, reproductive justice