Oliver Boorstein

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Education

University of Oregon — **Sep 2023 – Jun 2027**
B.S. in Computer Science — *Eugene, Oregon*
Minors: Mathematics, Music Technology
GPA: 4.22 / 4.30
Relevant Coursework: Parallel Computing, Databases, Artificial Intelligence, Data Structures & Algorithms, Linear Algebra

Experience

Oregon Networking Research Group — **May 2025 – Present**
Undergraduate Researcher — *Eugene, Oregon*

- Architected and deployed an internal full-stack visualization platform, using **SvelteKit** and **TypeScript**, aggregating over **25 terabytes** of NetFlow data across the University of Oregon via a **RESTful API** backend.
- Built a **SQLite** database of traffic statistics (**1M+** entries) maintained via **Python**, increasing query speeds by **900%**.
- Ported several multifractal IPv4 analysis functions from **Haskell** to **C++**, reducing processing time by **80%** and enabling new time-series traffic and anomaly detection analyses.
- Developing a machine learning pipeline to forecast campus network traffic using multifractal IPv4 features.
- Supported by a competitive stipend from the National Science Foundation Research Experiences for Undergraduates.

University of Oregon — **Sep 2024 – Jun 2025**
Computer Science Learning Assistant — *Eugene, Oregon*

- Led office hours for up to **5** students per session, covering beginner to advanced **Python** topics.
- Supported **300+** students across **three** CS courses, collaborating with TAs to improve engagement and retention.

Projects

Music Publication Website | *React, Convex, TypeScript, Bun* — **Jan 2025 – Present**

- Developed a **full-stack** music publication platform using **React**, **TypeScript**, and **Convex** in a team of 4.
- Led a site-wide migration from embedded articles to document storage in **Convex**, improving page load speeds by **20%**.
- Designed a cohesive UI with **Tailwind CSS**, improving usability and visual consistency.
- Deployed at thestoning.net via **Cloudflare** for global access and continuous integration/development.

L-Store Database | *Python, Pytest* — **Sep 2025 – Dec 2025**

- Directed a team of 4 to implement a lineage-based storage engine in **Python** (**80%+** test coverage via **pytest**).
- Implemented lineage-based table architecture supporting efficient OLAP/OLTP queries and contention-free merging.
- Designed concurrent transaction system using strict 2-phase locking, preventing deadlocks and ensuring thread-safety.

AR Classroom Assistant - LA Hacks 2025 | *Spectacles, Gemini, TypeScript, React, Python* — **Apr 2025**

- Led development as 1 of 4 students representing the University of Oregon among 1,000+ participants at LA Hacks.
- Created an AR learning assistant using Snap's experimental **Spectacles** to provide real-time lecture transcription.
- Built a **Python–Gemini API** pipeline to transcribe audio and generate contextual summaries and related questions.

Involvement

Album Listening Club — **Sep 2023 – Present**
Co-President — *University of Oregon*

- Lead weekly meetings for one of Oregon's largest student clubs focused on music discussion and community.
- Manage a **$2,000** budget to fund activities, prizes, and growth to over **50** weekly attendees.
- Directed local music events generating over **$5,000** in revenue and over **1,000** attendees across events.

Leet Club — **Dec 2023 – Jun 2025**
Vice President — *University of Oregon*

- Designed weekly **data structures** and **algorithms** challenges and guided peers through optimized solutions.
- Co-organized HackUO and QuackHacks, the University of Oregon's first hackathons since 2016.

Technical Skills

Languages: Python, TypeScript, SQL, C/C++, JavaScript, HTML, CSS, Bash
Technologies: React, Svelte/SvelteKit, Next.js, Convex, SQLite, Tailwind CSS
Tools: CI/CD, GitHub Workflows, Git, Bun, Node.js, Linux/UNIX