

Orion Bloomfield

Software Engineer and Student Researcher
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Education

Brown University

Providence, RI

- *Bachelor of Science in Computer Science*

Sep. 2020 - May 2024

Concurrent Masters of Science in Computer Science

GPA: 3.92/4

- > **Related Coursework:** Accelerated Intro to CS, Deep Learning, Software Engineering, Computational Molecular Bio., Accelerating Chemical Discovery, Recent Applications of Probability and Statistics, Honors Linear Algebra

Experience

Microsoft

Redmond, WA

• *Software Engineering Intern - Azure Data Usage Billing Team*

June 2022 - August 2022

- > Created a **vscode extension** from scratch, utilizing **language modeling** to generate code actions that will elevate **customer experience** for an upcoming **Azure IaaS** product.
- > Implemented code completion, navigation, and error handling in a **C# backend service**, communicating to the client as well as other Azure **microservices** through a JSON-RPC language server protocol

Brown University

Providence, RI

• *Research Assistant - Dr. Rubenstein Theoretical Chemistry Group*

May 2022 - Present

- > Building a webapp to host and support queries to a curated dataset of **protein-peptide interaction** pairs
- > Implementing interactive viewers for **3D structure**, sequence, and markov model dynamics data.
- > Outfitting public **RESTful API** hooks as well as database filtering and downloading to help researchers search, curate, and collect data scrutinizing any parameter

Care New England

Providence, RI

• *Research Assistant - Dr. Uzun's Genomics and Machine Intelligence Lab*

August 2021 - June 2022

- > Developed an interactive **React** application that generates **multi-layer graph networks** from **protein interactomes**.
- > Implemented **caching** and **multi-threading** to optimize **Java** server host, reducing computation time by over **75%**
- > Innovated and ported over CLI services actively used by **hundreds** of researchers.

Ladd Observatory

Providence, RI

• *Observatory Assistant - Brown U. Dept. of Physics*

August 2021 - Present

- > Lead group observatory viewing sessions for **100+** visitors a night, operating historical telescope equipment.

Frutor LLC

Montgomery, NJ

• *Online Tutor*

July 2020 - Present

- > Tutor in biology, chemistry, computer science, calculus, and college essay writing for over two years. Average improvement of **1-2 letter grades** within the first three months

Stanford University School of Medicine

Stanford, CA

• *Summer Intern - Dr. Seung Kim's Developmental Biology Lab*

July 2019 - August 2019

- > Created **Python** scripts to aid in the systematic analysis of **iPCR** reads and expression data.
- > Taught **12** rotating high school biology teachers **Drosophila genetics** basics and classroom adoption methods.

Projects

pep-BIRD: *Summer 2022 - Present* - **Express.js** webhost of a curated dataset of high-fidelity protein-peptide interaction pairs. Using **React** with **THREE.js** to display custom alignment **3D protein models** along additional markov state dynamics modeling

Proteinarium: *Fall 2021 - Present* - **React** webapp built from the ground up with **D3.js** to visualize **graph clustering** algorithms on **protein interactome** data. Configured host of **Red Hat Linux** to scale, cache, and distribute **Java** backend services evenly.

CounterPointer: *Spring 2021* - Classical counterpoint checker and generator service for **music theory** students. Designed and implemented **React** frontend with **Typescript** object modeling for music notation.

peaCTF: *Summer 2019, 2020* - Founded **capture-the-flag** style web competition for aspiring **Cybersecurity** students. Attended by over **2,000** high school participants across the globe. Designed and implemented **React** frontend. Led problem design team.

Leadership

Brown Puzzle Club - Founder: *August 2021 - Present* - Leading a small team to design and test **competitive word/logic puzzles** for upcoming online events. Run **scavenger hunts**, **escape rooms** for Brown student events. Amongst Brown alumni, **placed 7th out of 393 teams** in the *2022 MIT Mystery Hunt*.

The Higher Keys - Business Manager: *August 2021 - Present* - Brown's **oldest** all-gender acapella group. Coordinate and plan **local performances**, with some events amassing over a **third** of the Brown student body. Network and contract **professional gigs**, touring yearly across the United States. Handle **funding** and **reimbursements**.

Skills

Languages and Technology: Java, C#, Javascript, Typescript, Python, React, Node.js, Golang, C++, Machine Learning, Tensorflow, Numpy, SQL, Docker, Git, Decentralized Networks, DeFi, Cryptography, Cybersecurity, Unit Testing

Scientific: Proteomics, PCR and iPCR Protocols, IHC Staining and Spectroscopy, BLAST Analysis, Gel Electrophoresis

Design: Figma, LaTeX, Adobe Photoshop, Adobe Premiere, Adobe InDesign

Miscellaneous: Puzzle Competitions, Teaching and Tutoring, Choral Singing