CHRISTOPHER CHEN

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EDUCATION

BROWN UNIVERSITY Providence, RI| 09/2022 - 05/2026

Sc.B in Applied Mathematics—Computer Science *Cumulative GPA: 3.88/4*

Relevant Coursework: Database Management Systems; Computer Networks; Operating Systems; Design and Analysis of Algorithms; Numerical Optimization; Operations Research in Probabilistic and Deterministic Models

SKILLS

Languages: Python, Java, Javascript, TypeScript, C/C++, Go, Rust, Dart, HTML/CSS
Technologies: React, Express.js, Node.js, RESTful API, MongoDB, AWS, SQL, Django, Flutter, Git, Docker, VIM, Figma, TailwindCSS

PROFESSIONAL EXPERIENCE

Brown IVL (BRICS), *Undergraduate Research Assistant* Providence, RI | September 2024 - Present

- Collaborating on the development of a WebAssembly-based web interface to compile and manage C++ code for IVL's 60+ motion capture camera system, enabling real-time parameter adjustments and simplifying access for other researchers
- Maintaining and optimizing a 10,000+ line C++/Python codebase, writing clear documentation to improve scalability and ease of use by future researchers

Vane, *Software Engineering Intern* Remote | June 2024 - Present

- Developed a mobile app using Flutter and MongoDB, improving performance and reducing development time by 30% through efficient use of reactive components and declarative UI patterns
- Built a web database editor using React, Node.js, and Express.js, creating APIs that enabled real-time data synchronization across the team, improving turnaround time by 25%
- Automated data collection with a Python-based web scraper, cutting manual data entry by 80% and optimizing event information management with MongoDB aggregation pipelines

TetherView, *Data Analysis and Marketing Intern* Oceanport, NJ | January 2022 - June 2022

- Developed web scraping algorithms using Python to collect and analyze vast datasets on web traffic and keyword frequencies to write effective meta descriptions and ad copies for TetherView's website, leading to a 20% increase in TetherView's website traffic
- Created, edited, and published advertising material for TetherView's blog and YouTube channel, garnering hundreds of views for each domain

PROJECTS

Weenix OS, *CSCI2670: Operating Systems* Spring 2024

- Engineered a comprehensive Unix-based kernel in C over 14 weeks, encompassing over 5,000 lines of code. Successfully simulated a fully functioning OS, integrating essential features like process management, memory handling, and system calls
- Implemented user address space management, virtual memory mapping, and system calls, handling up to over 1,000 simulated user processes simultaneously without errors
- Designed and integrated core components, including virtual file systems, on-disk file systems, and synchronization primitives, ensuring the operating system could handle file operations with 99.9% reliability during testing

Tomorrow@Brown, *Hack@Brown* Spring 2024

- Led as the frontend developer, implementing 3+ landing pages using JavaScript and React, and successfully connecting backend to frontend endpoints within 24 hours during the hackathon.
- Preprocessed 200+ on-campus event emails and constructed a system that leverages the TF-IDF algorithm and cosine similarity to accurately rank and return the most relevant emails based on user queries, optimizing responsiveness to verbose prompts