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; Computer Vision; Design and Analysis of Algorithms; Numerical Optimization; Operations Research in Probabilistic and Deterministic Models

SKILLS

Languages: Python, Java, C/C++, Javascript, Go, Rust, Dart, HTML/CSS, Matlab, R
Technologies: React, Express.js, Node.js, MongoDB (NoSQL), SQL, Django, Flutter, Git, Docker, VIM, Figma, TailwindCSS

PROFESSIONAL EXPERIENCE

Brown IVL (BRICS), *Undergraduate Research Assistant*   Providence, RI | September 2024 - Present
- Developing and maintaining low-level software for multi-camera systems in C++ and Python, contributing to the expansion of the BRICS system from 50 to 300+ cameras for advanced human-robot interaction capture
- Collaborating with research associates to advance state-of-the-art 3D computer vision and deep learning algorithms, focusing on neural fields for modeling visual and physical quantities in scenes and objects
- Contributing to the design of hardware components through 3D modeling in Autodesk Inventor and Fusion360

Vane, *Software Engineering Intern*   Remote | June 2024 - Present
- Delivered a reactive, declarative mobile app using Flutter and MongoDB, and constructed a web database editor with React, Node.js, and Express.js. Engineered APIs for the database, enabling real-time data updates and collaboration among numerous team members, improving feature delivery and project turnaround time by 25%
- Contributed to the development of a social party chat feature for the mobile app, writing 500+ lines of server-side and client-side user interface code, and creating relevant MongoDB schemas and Atlas functions
- Designed a Python-based web scraping system using pandas and Beautiful Soup, automating the collection of event data and reducing manual data entry by 80%. Leveraged MongoDB aggregation pipelines to streamline Vane's event information collection

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