

ERIC XIE

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Education

Boston University

Bachelor of Science in Computer Engineering

May 2024

Boston, MA

Experience

Boston University Biological Design Center

June 2023 – August 2025

Undergraduate Software Researcher

Boston, MA

- Improved efficiency in microfluidic design workflows by enhancing Neptune, a design automation tool, and 3duf, a visual design tool, used by researchers and engineers
- Enhanced functionality by implementing new features, including rendering unknown components as black boxes and enabling component reflection, while integrating 10+ additional components to improve usability and design versatility
- Streamlined compatibility across the Neptune toolchain, ensuring outputs from LFR, MINT, and JSON modules were valid inputs for subsequent tools, leading to seamless rendering in 3duf
- Automated processes by writing **Python** scripts to generate, manipulate, and evaluate microfluidic designs
- Established benchmarks for design algorithms by modeling real-world microfluidic systems, validating designs against experimental data to improve reliability and precision

Langolio - Senior Capstone Project

September 2023 – May 2024

Software Developer | React, Python, MongoDB, Docker

Boston, MA

- Co-developed Langolio, a language exchange app connecting students for practice, while organizing regular meetings with our client to establish **business objectives** and meet **customer needs**
- Implemented an in-house chat service for real-time communication between users, and a pairing service to match students based on their language learning goals, utilizing **REST API** for seamless data exchange
- Integrated **Google Auth** for secure login, incorporated censorship mechanisms to filter inappropriate content, and utilized **OpenAI API** for grammar correction and scoring
- Displayed comprehensive student statistics on the frontend to track progress and engagement, enhancing the user experience and learning outcomes

Boston University College of Engineering

January 2022 – May 2023

Engineering Teaching Assistant

Boston, MA

- Led discussion sections and midterm review sessions and supported lectures by solving group problems for Engineering Mechanics I
- Redesigned exam review packets and answer sheets, incorporating student feedback and past exam problems to improve clarity and effectiveness
- Provided additional support through one-on-one tutoring and office hours, addressing individual student concerns and enhancing their understanding of course material

Projects

The Wild Oasis – Hotel & Guest Web Apps | *React, Next.js, TailwindCSS, Supabase*

- Developed hotel and guest web applications that support end-to-end management of reservations, cabins, and profiles, improving the booking process for customers and operational efficiency for staff
- Built guest-facing functionality including cabin search with filters, interactive reservation management, and persistent profiles for faster repeat bookings, enhancing the user experience
- Designed staff dashboards for overseeing cabins and reservations, featuring sortable and filterable tables, automated check-in/out flows, payment confirmation, and statistical overviews to streamline daily operations
- Implemented secure authentication, role-based access, and dark mode, with both sites interconnected through a shared PostgreSQL database, ensuring consistency and a seamless experience across user types

World Wise – Vacation Tracker Web App | *React, Supabase*

- Created an interactive map-and-dashboard interface to help users visually track visited cities and trips, enabling them to add cities, take notes, and mark visit dates through clickable map markers and city detail panels
- Developed a city-to-trip linking system so users can organize their travels, with tabbed views for cities, trips, and countries that allow adding, editing, and deleting entries while maintaining relationships between cities and trips
- Built features to enhance usability and travel management, including automatic map centering on cities, seamless trip navigation, and a structured display of cities and trips, giving users a clear way to view and update their travel history

Technical Skills

Languages: Python, C/C++, JavaScript/TypeScript, Matlab, Verilog

Developer Tools: VS Code, Git, VirtualBox VM, Docker, PowerBI Makefile, Microsoft Office, Arduino

Technologies/Frameworks: React, Linux, JSON, MongoDB, Supabase