Christopher Bannon

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Education

University of California, Berkeley Aug 2020 – Dec 2024
Bachelor of Arts in Computer Science - GPA: 3.75 *Berkeley, CA*
Coursework: UI/UX Design & Development, Data Structures, Algorithms, Computer Architecture, Operating Systems, Discrete Math & Probability, Data Science, AI, Machine Learning, Digital Design & Integrated Circuits

Technical Skills

Languages: Java, Python, C/C++, SQL (Postgres), JavaScript, Typescript, HTML/CSS, Go, Swift, Verilog, RISC-V
Tools: React, Next.js, SvelteKit, Flask, FastAPI, Redux, MongoDB, Firebase, pandas, NumPy, PyTorch, seaborn

Experience

KAIST School of Computing Aug 2024 – Dec 2024
HCI Research Intern – Make Lab *Deajeon, South Korea*
- Developing full-stack and XR applications to research the use of **generative AI in spatial computing**
- Building electronic modules with physical properties controlled via software-driven temperature manipulation

UC Berkeley EECS Aug 2023 – Aug 2024
HCI Researcher - Hybrid Ecologies Lab *Berkeley, CA*
- **First author** publication: **ACM C&C 2024** "A Toolkit for Crafting Simple Sonic Interfaces in Education"
- Programmed a **distributed BLE communication protocol** for ESP32 microcontrollers in sensing applications
- Launched a **Next.js** dashboard to visualize and interact with the system's server **20+** client nodes in real-time

Student Instructor - User Interface Design & Development *Jun 2023 - Aug 2024*
- Automated course infrastructure and grading with Playwright and Python, **saving 10%** weekly TA hours
- Critiqued **1000+** assignments/projects and received a **9.4/10.0** approval rating for **teaching effectiveness**

FavorX May 2023 – Aug 2023
Software Engineer Intern *Remote*
- Designed **10+ user-centric** application screens and user flows in Figma and deployed solutions in **React Native**
- Scaffolded a **scalable** service using Expo's API to upload profile pictures to a **secure URL** in an **AWS S3** bucket
- Streamlined the 'token transfer' user experience, increasing peer-to-peer transactions by **15%**

Projects

Better Connections | *React, Framer, FastAPI, MongoDB* https://connections-lyart.vercel.app/
- Deployed a **Progressive Web App** to improve the mobile experience of the NYT Connections Game
- Hosted a rate-limited backend API with an AI-powered hint endpoint using **GPT-4o mini**
- Utilized a **Github Actions** workflow to asynchronously scrape and store data to keep the app up-to-date

Sailor Frontend Web Framework | *Swift, Python, WASM, JSKit* https://github.com/SailorWebFramework
- Created basic **routing** functionality with JavascriptKit for the **open source** Swift-based frontend web framework
- Developed a companion CLI tool 'Compass', to generate new projects and automatically manage project resources

RISCV CPU with Audio Synthesizer — *Verilog, C, Python*
- Built and unit tested a 3-stage pipelined RISC-V CPU with integrated UART for tethering, using Verilog
- **Doubled** clock speed to **100MHz** by adding pipeline stages, smart forwarding, and BTFNT branch prediction

Neural Network | *Python, NumPy*
- Created a neural network from scratch and designed support for fully connected, convolutional, and pooling layers
- Optimized hyperparameters to achieve **98%** accuracy on the Iris dataset

NumC | *C, RISC-V*
- Implemented matrix operations in assembly and optimized efficiency with SIMD instructions and parallelization
- Achieved a **978x** speedup over naive power operation via loop unrolling, repeated squaring, and cache blocking