David Ban

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EDUCATION

Bachelor of Arts in Computer Science — **University of California, Berkeley, 2024**
GPA: 3.83

Coursework: Deep Neural Networks • Efficient Algorithms and Intractable Problems • Operating Systems and Systems Programming • Information Devices and Systems I-III • Discrete Math and Probability • Data Structures • Algorithms for Computational Biology

EXPERIENCE

Full Stack Intern
Enable Medicine — **June 2022 - August 2022, San Francisco, CA**

- Spearheaded the development and implementation of a robust pipeline integration for seamless generation of cell analysis and insights in Python, resulting in improved efficiency and accuracy.
- Conducted data and image analysis of cell annotations and screenings to extract valuable insights and drive informed decision-making.
- Designed and developed a user-friendly front-end application using Node and AWS, empowering users to independently generate customized analysis of cell types and distances.

Software Engineer Intern
Idaho National Lab, Materials and Fuels Complex — **June 2021 - August 2021, Idaho Falls, ID**

- Developed and verified cutting-edge software and hardware tools to accurately reconstruct 3-D object geometry from precise 1-D profile measurements in Python.
- Streamlined and packaged the code for future use on analysis of nuclear fuel rod cladding. Improved efficiency of code execution and generated high-precision geometries under tight set-of-boundaries for each object.

Machine Learning Researcher
Computational Biology Dept of University of Pittsburgh — **January 2018 - July 2020, Pittsburgh, PA**

- Developed and implemented spatial transformer neural networks to accurately predict protein-ligand binding using Caffe and PyTorch.
- Conducted extensive research to evaluate and compare different models using various metrics and visualizations, creating a data-driven approach to optimize performance and interpretability.
- Presented research findings at multiple science fairs and national symposiums.

PROJECTS

AI Voice Translator
June 2023 -August 2023

- Developed and implemented an AI-powered voice conversion system for a website, enabling users to transform their voices in real-time for use in calling applications such as Discord.
- Created a user-friendly interface and integrated the voice conversion functionality seamlessly into the website, providing a smooth and intuitive experience for users.
- Optimized the website's performance, scalability, and compatibility with various calling apps

PintOS: A simple operating system
September 2022 - December 2022

- Developed a complete operating system from the ground up using C, implementing essential components such as process management, memory management, and file system functionalities.
- Designed and optimized data structures and algorithms to efficiently handle system resources, enhancing the performance and scalability of the operating system.
- Conducted rigorous testing and debugging to ensure the stability and reliability of the operating system, delivering a robust platform for various computing tasks.

SKILLS

Coding Skills: Java, Python, HTML/CSS, SQL, PyTorch, Javascript, Node.js, AWS, LaTeX, PyTorch, Pandas

Languages: English, Chinese (Mandarin), French

Other Campus Involvements: Berkeley Math Tournament Organizer, Dance Games at Berkeley Officer, Historical Fencing at Berkeley Officer