Jeffrey Wong

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EDUCATION

University at Buffalo: ***B.S. Computer Science***

RELEVANT COURSEWORK

Computer Organization, Distributed Systems, , Quantum Computing, Operating Systems, Modern Networking Systems

TECHNICAL SKILLS

- **Languages**: C++, C, Python, VHDL, Verilog, CUDA
- **Frameworks/Technologies**: GCC, Vim, Cmake, Git, Conan, Artifactory, Bash, PingDaVinci, InfluxDb, Docker

EXPERIENCE

CVS Health *Hartford, CT*

Software Engineer Intern *May - August 2025*

- *• Engineered distributed backend tools within **Ping Identity's ARIA platform** for **SAML-based application onboarding**, integrating **RESTful APIs**, **multi-tenant CRUD pipelines**, and **RAG architectures with Pinecone** for secure, context-aware knowledge storage and retrieval.*
- *• Developed and trained **Gen AI onboarding agents** leveraging **Ping Federate** and **ARIA API orchestration**, enabling automated mapping of SAML metadata, identity assertions, and access policies across federated environments.*
- *• Partnered with the **Ping Risk** and **Automation** teams to strengthen **OAuth 2.0 authorization** and **JWT token management**, implementing thread-safe token validation and adaptive authorization flows under high concurrency.*

TrainAI

Software Engineer

- ***Developed** an AI-powered nutrition application that generates custom meal plans based on user food preferences and restrictions, leveraging GPT and PubMed research data, built with **Python (Flask)**, **React.js**, and **Node.js**.*
- ***Enabled** full macronutrient breakdowns for each plan using **Pandas** and **NumPy**, helping users achieve fitness goals such as muscle building, fat loss, or overall weight management.*
- ***Built** interactive UI with **React.js** and **Chart.js** for adjusting dietary parameters and visualizing nutrition profiles in real time.*

PROJECTS

***MIPS CPU Design and Simulation** | Quartus, ModelSim, VHDL, Computer Architecture*

- *Designed and simulated a pipelined MIPS CPU with instruction fetch, decode, execute, memory, and write-back stages; implemented hazard detection and forwarding units to optimize throughput.*
- *Recreated a pipelined MIPS CPU in C++ using object-oriented modeling of the IF/ID/EX/MEM/WB stages, implementing cycle-accurate execution, register-file behaviors, and ALU/control-unit logic.*
- *• Built a full simulation environment in C++ to emulate memory operations, stack/heap growth, and address translation; validated behavior against real ISA specifications and hardware-accurate timing models.*

Dynamic Memory Allocator | C / C++ / Linux / Systems Programming

- *Designed and implemented a dynamic memory allocator (malloc, calloc, realloc, free) from scratch, managing heap blocks via metadata headers and boundary tags.*
- *Implemented best-fit and first-fit allocation strategies with coalescing to reduce external and internal fragmentation.*

***Algorhythm |** React.js, Node.js,*

- *Developed step-by-step visualizations for key algorithms such as BFS, DFS, Dijkstra's, and Binary Search, allowing users to explore and understand their operations in real-time.*