

# Albert Zhao

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## Education

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**Boston University, College of Engineering**, Boston, MA Expected May 2025  
B.S. Computer Engineering, Minor in Business Administration  
*Concentrations:* Machine Learning & Technology Innovation  
*Relevant Coursework:* Algorithms & Data Structures, Operating Systems, Software Engineering, Logic Design, Machine Learning, Deep Learning, Cloud Computing

## Experience

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**Marvell Technology**, Design Verification Intern | *Santa Clara, CA* May - Aug 2024

- Designed and implemented reactive UVM agents for efficient data processing in FIFO and priority queue structures.
- Developed UVM testbench components and debugged complex verification environments using Synopsys VCS.
- Acquired expertise in SystemVerilog, RTL design, and comprehensive pre/post-silicon validation techniques.

**CIDAR Lab**, Cyber-Physical System Research Associate | *Boston, MA* Jun - Sep 2023

- Developed a high-precision syringe pump using Raspberry Pi, Python, and 3D printing to improve microfluidic control.
- Formulated software algorithms to optimize regional water quality assessment using Python and C++.
- Innovated syringe pump, achieving a 300% cost reduction and a 70% size decrease when compared to industry standards.

**Elevo.ai**, Software Developer Intern | *San Jose, CA* Jul - Sep 2022

- Implemented clickstream data using Java, Python, Apache Kafka, and Rudderstack, improving processing capabilities.
- Consolidated diverse data sets into a unified cloud server, optimizing company operational ease and efficiency.
- Enhanced data transfer by integrating Apache Kafka into the business website, cutting energy consumption by 40%.

**ARMS Lab**, Automation and Robotics Research Associate | *San Jose, CA* May - Jul 2022

- Designed robotic exoskeleton limb for safe, compliant human interaction in rehabilitative technology.
- Utilized CAD, Python, and C++ to construct and program the exoskeleton for enhanced mobility in paralysis patients.
- Refined motor torque and synchronized adaptive motors to achieve seamless operation and responsiveness to movements.

## Projects

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**Ansible Wrangler Automation**, *RedHat & Cloud Computing Project* Aug 2024 - Present

- Automating Ansible playbook generation using Llama and OpenAI LLM and ServiceNow API, integrated via RESTful APIs.
- Implementing modular Ansible system with Python and YAML, reducing incident response time and enhancing efficiency.
- Designing and building a front-end system to allow users to put and review incidents without logging into ServiceNow.

**Classifying CT Scan Imaging with 3D Convolutional Neural Network**, *Deep Learning Project* Aug 2024 - Present

- Developing 3D CNN for detecting abnormalities in medical images, using image thresholding for accuracy.
- Utilizing TensorFlow for classification and applying data augmentation to enhance performance.

**FoodPal**, *Software Engineering Project* Oct - Nov 2023

- Developed a delivery app using Flask and SQL, integrating Spoonacular and DoorDash APIs for personalized experiences.
- Seamlessly connected front and back end using JavaScript, Flask, SQL & OAuth for dynamic recipe and automated delivery.

**Tennis Ball Game on FPGA**, *Logic Design Project* Jan - Apr 2023

- Developed complex FPGA-based tennis game, demonstrating proficiency in hardware design and Verilog programming.
- Implemented features such as debouncers, input handling, and score tracking using state machines and hierarchical design.

**Food Tinder**, *Hack Harvard* Oct 2022

- Streamlined dining recommendation engine using Python, Yelp API, and graphics interface.

## Skills & Interests

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**Programming Languages:** Python, Java, JavaScript, C++, C, SystemVerilog, MATLAB, YAML

**Developer Tools:** VS Code, Jupyter Notebook, PyCharm, Arduino IDE, Raspberry Pi, Vivado

**Technology/Frameworks:** OOP, Data Structures and Algorithms, Logic Design, VHDL & FPGA, APIs, Flask, SQL, Git, TensorFlow