# Albert Zhao

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## EDUCATION:

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

## WORK EXPERIENCES:

**Software Engineering Teaching Assistant,** Boston, MA — Jan 2024 - Present
*Intro to Software Engineering*

- Leading 120+ students to proficiency in advanced C++ and object-oriented programming, and grading assignments and labs.
- Introducing students to key concepts in data structures & algorithms and leading weekly labs.
- Showcasing strong communication and teaching skills by hosting weekly office hours that enhance student learning.

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

- Developed 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.
- Prototyped and created housings for simulated aquatic environments using CAD software AutoCAD and laser cutters.

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

- 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 business website, cutting energy consumption by 40%.
- Conducted extensive market research involving emerging customer needs, preferences, and trends in the AI space.

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

- Designed a robotic exoskeleton limb, advancing rehabilitative technology for safe, compliant interaction with humans.
- Constructed a functional exoskeleton, utilizing CAD, Python, and C++ to provide mobility for paralysis patients.
- Refined motor torque through C programming and advanced software, achieving seamless, regulated operation.
- Engineered adaptive motors, synchronizing power and speed adjustments in response to patient movements.

## PROJECTS:

**FoodPal,** *Software Engineering Project* — Nov 2023

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

**Tennis Ball Game on FPGA,** *Logic Design Project* — 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 machine and hierarchical design, and successfully integrated various input & output components using structural and behavior Verilog on an FPGA platform.

**Smart Snake,** *Intro to Software Engineering Project* — Dec 2022

- Conceptualized and implemented a captivating snake game using Python, PyGame, and C++ to engage gaming enthusiasts.
- Redefined code structure and improved program efficiency by applying Object-Oriented Programming principles.

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

- Streamlined dining recommendation engine using Python, Yelp API, and graphics interface.
- Enhanced decision-making efficiency by employing Tinder's swipe logic in a personal curated recommendation process.

## SKILLS & INTERESTS:

***Programming Languages:*** Python, Java, JavaScript, C++, C, Verilog, MATLAB
***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