BENJAMIN ELMORE

Computer Science Student

U.S. Citizen
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Computer Science student, software engineer, and Vice President of the CBU1 VEXU Robotics team, experienced in embedded programming, software engineering, machine learning, and multiple programming languages, including C/C++, Python, and Java.

EDUCATION

CALIFORNIA BAPTIST UNIVERSITY
Bachelor of Science in Computer Science | Concentration in Machine Learning and Artificial Intelligence **GPA: 4.00**
Sophomore, Expected Graduation May 2029

TECHNICAL SKILLS

- **Languages**: C, C++, Java, Python, MATLAB
- **Skills**: Object-Oriented Programming, Machine Learning/Optimization, Autonomous Robotics, Software Documentation
- **Tools**: Linux (Ubuntu/Debian), TensorFlow, FreeRTOS, ESP-IDF, Arduino, Git/GitHub, I2C, Jira, PlatformIO, UART, RS485

EXPERIENCE

CBU1 VEXU ROBOTICS, Riverside, CA
Vice President | Oct. 2026 – Present

- Coordinating engineering milestones across discipline-specific teams, helping engineers meet deadlines and preventing critical-path issues.
- Supporting the planning process of events, competitions, and preparation for VEXU Worlds.

Software Engineer | Sep. 2025 – Present

- Engineering embedded software in C++ for sensor data collection by ESP32 microcontrollers, focused on developing interfaces for optical, encoder, and color sensors that allow robotics teams to utilize non-VEX sensors with the V5 brain.
- Team contributor on prototype logic for the CBU Robotics drivetrain using Pure Pursuit Algorithms and PID-based motor control for path following, leading future implementations to follow predefined Catmull-Rom Splines and Bezier Curves.

IN-N-OUT BURGER, San Marcos, CA
Associate | May 2024 - Present

- Customer service in a fast-paced environment, while maintaining high-quality company standards.

PROJECTS

ARC, Sensor Data Abstraction for VEX Robotics | Aug. 2026 - Present

- Software engineer for ARC, a library abstraction layer, for the ARSENAL, a custom board with an ESP32-S3 and I2C mux that collects sensor data for the VEX V5 Brain.
- Collaborating with Electrical and Computer Engineers to develop code interfaces to board hardware, such as multiplexers, sensors, and lighting, before creating abstraction layers for high-level use.
- Prototyping design architecture for large-scale data collection with RTOS task handling, sensor-specific callback registries, and mutex protection of shared memory.
- Organizing a cohesive interface to ARC with OOP in C++ for a potential release alongside the ARSENAL, allowing future robotics teams to utilize the library to create programs without low-level sensor interfacing.

Stock Market Machine Learning Model | Nov. 2025 - April 2026

- Created preprocessing algorithms with pandas/NumPy to develop three-dimensional, 100-day windowed tensors.
- Utilized Python/TensorFlow to design an LSTM-based neural network as a time-series, structured model with a pipeline from 100-day input to transformation, training loops, and predictions.
- Researched financial indexes (Fear and Greed, Volatility, Inflation Rate) and public company data (ROE, Debt-to-Equity) as model input features.