

STEPHANNY BAIS

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EDUCATION

University of Central Florida

May 2025

Bachelor of Science in Computer Engineering

Relevant Courses: Real-Time Systems, Embedded Systems, Computer Vision, Processes for Object-Oriented Software Development, Discrete Structures, Computer Architecture, Operating Systems, Computer Communication Networks

PROJECTS

Orlando Health: Blood Loss Monitor *ESP32, Nextion*

August 2024 - April 2025

<https://github.com/nanihanny/Senior-Design-Blood-ID>

- Collaborated with Electrical, Computer, and Biomedical Engineers to develop a real-time and embedded system for monitoring blood loss during cesarean procedures, with consideration of medical standards.
- Designed UI with Nextion Editor, displaying key metrics such as total blood loss and flow rate, along with multiple UI modes, with each mode offering different indicators and data for more tailored monitoring.
- Ensured reliable data transfer from sensor to monitor via ESP32 using I2C and UART, utilized RTOS for task coordination, and integrated software touchscreen buttons for redundancy.

SmartParol *ESP32, ESP-IDF*

October 2024 - Present

- A Filipino star-shaped lantern that is Wi-Fi-enabled, music-reactive, fetching real-time audio features to create synchronized LED patterns. Will include a Mobile app that communicates with an ESP32 over Wi-Fi to trigger LED flashes based on beat data extracted from Spotify API.

ClawBot *ESP32, LiDAR, NumPy, OpenCV*

October 2024 - December 2024

<https://github.com/nanihanny/Robotics-Final-Project-Fall-24>

- Collaborated with 4 teammates to develop an autonomous robot capable of detecting, navigating, grasping, and transporting objects back to its designated starting point.
- Designed and programmed the bot's arm and claw using a Servo motor controlled by an ESP32.
- Assisted with data processing using NumPy and OpenCV to detect object color and position, triggering a command to the server to move the claw and grasp the object.

RangeFinder *Eagle, TI Webench, MSP430*

April 2024 - August 2024

- Developed a range finder with an ultrasonic sensor and LCD to measure and display the distance to a nearby object.
- Designed 3.3V and 5V regulators using TI Webench, created regulator and main PCBs with Eagle, programmed MSP430 to collect and display sensor data, and assembled the system through soldering and use of a reflow oven.

CoHab: Full Stack Roommate Dashboard *Flutter, Heroku*

February 2024 - April 2024

<https://github.com/PG-002/CoHab>

- Worked collaboratively with 7 teammates to create a Web/Mobile app aimed to improve roommate communication and coordination through a calendar, task list, group chat, and location sharing features.
- Designed multiple mobile app pages using Flutter, including main/dashboard and registration screens, ensuring UI consistency with the web counterpart, and implemented token-based authentication to access and retrieve data securely from the database.

Contact Manager *JavaScript, HTML, CSS, MySQL, DigitalOcean*

January 2024 - February 2024

<https://github.com/ellieteter/Group9-small-project>

- Deployed a full-stack contact manager with 3 teammates, enabling users to add, search, and delete contact information, as well as manage account registration and deletion.
- Led UI development and implemented pages using Bootstrap, such as main, login, and sign-up, as well as functionalities including button controls, pagination, and data validation via API endpoints before storage in the backend database.

SKILLS

Languages: Java, C, Python, C++, JavaScript, Dart, HTML, CSS

Libraries and Frameworks: Arduino, ESP-IDF, NumPy, OpenCV, Flutter

Development Tools: Git, VSCode, Google Colab, PuTTY, IntelliJ

Design and Simulation Tools: Fusion360, Eagle, MultiSim, LTspice, SolidWorks

Hardware: Reflow Oven, Pick and Place, Multimeter, Oscilloscope, SMD Soldering, 3D Printer