

Jack Balthasar

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OBJECTIVE

Looking for a summer internship after graduating with BSEE. Seeking position to leverage technical skills, driving innovating in IOT, AI/Machine Learning, and/or hardware engineering

EDUCATION

Ph.D. Candidate in Electrical Engineering, The University of Alabama, Tuscaloosa AL, May 2029

Bachelor of Science in Electrical Engineering, The University of Alabama, Tuscaloosa AL, May 2025

Honors College - STEM Business Program GPA: 3.14/4.00 Minor: Mathematics

WORK EXPERIENCE

Mercedes-Benz USA, Vance, AL, August 2024 – May 2025

- Created a new automation process for audit showers
- Automated process for team members to use
- Created new PowerBI dashboard to store all car fault data
- Used KiCad to design circuit for microcontroller, transmitters, and sensors
- 3D printing and CNC design for parts and models
- Established wireless communication with microcontrollers and microcomputers using radio frequencies
- Used SolidWorks to design and build models and shells
- Python and serial communication between devices for database and analysis
- Designed custom PCB with KiCad
- Analog to Digital Converters

Mazda Toyota Manufacturing, Huntsville, AL, Summer 2024 May 2024 – August 2024

- Evaluation panel board energy usage and split utilities
- Created website and windows form app for interactive map and to store data from panel usage in database
- Power Distribution Board automation project
- Presented findings to engineering and management
- Power BI dashboard design and custom embedding into software with SQL database
- Worked with controls engineers to debug and solve issues

MMIC Medical Systems, St Johnsbury, VT, Summer 2021 May 2021 – August 2021

- Controls Software Engineer contractor
- Evaluated different software's for engineers to use for data automation
- Ignition, XLReporter, Excel data Management
- Developed one of the automation software using python and excel to display data
- Monitoring of Air Temperature, relative Humidity, Room temperature, Water Resistivity, Water Temperature.

LEADERSHIP EXPERIENCE

Technical Lead, IEEE Hardware Competition, Tuscaloosa, AL, Augst 2024–May 2025

- Was responsible for integration using raspberry pi 4 and camera module
- Used Open CV and April Tag libraries for real-time computer Vision and processing
- Ultra sonic, accelerometer, gyroscope, and compass for field navigation
- In charge of all microcontroller and microcomputer communication
- Used Arduinos and motor drivers to control motors for movement
- Supervised and Reinforcement Learning

Partner, Ingen Cubed Printing, Milton, GA, May 2021– June 2022

- Designed custom models and 3D prints
- Was technical lead for all printers and website designer
- Build and modified custom 3D printers for automation and specific printing needs

TECHNOLOGY EXPERTISE

- Design and code in Python, Java, C, C++, C#, and html
- Have built web scraping bots to pull information about websites
- Built video games in Unity using C and C#
- .Net Framework Design
- Microcontrollers and microcomputers IoT projects
- Designed custom circuits, 3D printed, and coded exoskeletons and environment
- Designed custom software and measured currents for power study project
- OpenCV, Pandas, TensorFlow, and Pytorch
- SolidWorks, LTSpice, MATLAB, KiCad
- Power BI and databases
- Home automation using Bluetooth, AWS Lamba, IFTTT