Joseph Telaak

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Skills

Programming	Technologies	Networking	CAD & EDA	Electronics
Java	MySQL	Cisco	Altium Designer	STM32 ARM MCUs
C/C++	MATLAB	P4	EAGLE	Arduino/AVR MCUs
Python	React JS	vSphere / ESXi	AutoCAD	PCB Design
Assembly	ROS + FreeRTOS	Active Directory	Inventor	FPGAs

Experience

GSSM Autonomous Golf Cart

Project Lead (Spring 2022 - Present)

- Lead a team of 6 students in developing both hardware and software for a fleet of self driving golf carts
- We received over $50,000 in grants from Google, SC Department of Education, and the GSSM Foundation
- I designed the control system hardware, which included completely custom embedded computer boards
    - ARM-based Drive-By-Wire ECU with relays, stepper motor drivers, and CAN/IVN interfaces
    - Nvidia Jetson carrier/ADAS computer with an integrated network switch and camera inputs
- I wrote the board firmware as well as the libraries to interface with them from the drive computer
- I helped write the fleet management system that is used to track and control the carts remotely

University of South Carolina, CEC Cyberinfrastructure Lab

Student Research Intern (Summer 2021)

- I worked with a team researching and developing applications for P4 programmable packet switches
- I designed and developed a suite of automated tests to measure throughput and packet loss

Activities

GSSM SPARK!

Python - Lead Instructor (Spring 2022)

- Led an 8-week bootcamp to teach rural and underprivileged middle-schoolers how to code in Python

Computer Science; Robotics – Instructor (Fall 2021)

- Led multiple after-school programs that teach and explore basic concepts to inspire local middle schoolers to enter STEM fields

FIRST Robotics

FTC & FRC - Programming Captain (Fall 2018 – Spring 2022)

- Led the team in the robot's software development
- States Finalist (2021 & 2022), Regional Finalists (2019), Design Award (2019 & 2020)

Education

University of South Carolina

Computer Engineering B.S.E (Fall 2022 – Spring 2024) – GPA 4.0

- Minor in Mathematics and Physics
- Coursework in Robotics, Advanced Programming, Unix Development, Computer Architecture, Electrical Engineering, Digital Logic Design, Data Structures, and Embedded Computing

South Carolina Governor's School for Science and Mathematics

High School Diploma (Fall 2020 – Spring 2022) – GPA 4.0

- Concentration in Computer Science and Mathematics
- Coursework in Data Structures, Compiler Design, Database Design, Computational Physics, Machine Learning, Artificial Intelligence, Electronics, System Architecture, and Networking
- Created the ENGIN 210 Projects course that is now a permanent part of the course catalog