Jyoti Adusumilli (Jay)

About Me

Computer Engineering graduate from Clemson University with experience in Robotics, Application Development, CAD, Education and Automation.

Education

- ✓ **Undergraduate**
  - ❑ **Clemson University**
  - ❑ 2019 - 2023
  - ❑ Computer Engineering Major
- ✓ **High School Degree**
  - ❑ **SC Governor's School for Science and Math**
  - ❑ Class of 2019
  - ❑ Concentration in Engineering and Computer Science

Work Experience

Akoustis **Huntersville, NC**
Modeling Engineer **Jan 2023 –**
- ❑ Worked as a modeling and software engineer creating mathematical models to model the properties of resonators. Created numerous software automation tools to improve workflows.

ECE **Charlotte, NC**
Engineering Intern **Summer 2022**
- ❑ Worked at an engineering consulting firm in the power industry. Worked on substation design, relay programming and writing equipment contracts.

SCGSSM **Hartsville, SC**
Student Assistant **Summer 19/21**
- ❑ Student Assistant at an overnight week-long STEM summer camp for five weeks. Taught game design using Unity and served as a camp counselor.

Clemson CI **Clemson, SC**
Researcher **Summer 2018**
- ❑ Researched movement algorithms for Clemson University for six weeks over the summer. Attended a youth research conference and presented the research.

Contact Info

https://github.com/Jay-Adusumilli

Skills

- ✓ **Strong Programming Background**
  - ❑ Python
  - ❑ C / C++ / Assembly
  - ❑ C#
  - ❑ MATLAB
  - ❑ HTML / CSS / JS
  - ❑ Linux / Unix / Shell
- ✓ **Certifications**
  - ❑ SolidWorks Associate (CSWA) (2019)
  - ❑ Microsoft Office Specialist in Word and Excel (MOS) (2016)
  - ❑ Python Institute Associate (PCAP) (2019)
- ✓ **Electrical Engineering CAD**
  - ❑ AWR Microwave Office
  - ❑ Ansys HFSS
- ✓ **Competitive Robotics Enthusiast**
  - ❑ Strong 3D printing skills
  - ❑ Proficient with CAD and electrical work
- ✓ **Teaching Experience**
  - ❑ Experience in STEM Education
  - ❑ Taught beginner Python course
- ✓ **Game Design Enthusiast**
  - ❑ Used Unity 3D to make video games as a hobby
  - ❑ Currently playing in a collegiate esports league for Clemson
- ✓ **Coursework Completed**
  - ❑ Operating Systems
  - ❑ Technical Writing
  - ❑ Computer Vision
- ✓ **Languages**
  - ❑ Proficient in English and Telugu
  - ❑ Intermediate in Chinese and Spanish

Work Experience Details

Akoustis **Huntersville, NC**
Modeling Engineer **January 2023 –**

- Primary responsibility is to generate mathematical models for piezoelectric resonators and filters that are used to design future products to customer specifications. Helped automate this task with Python to reduce the time required to generate models significantly.
- Gained experience in AWR Microwave Office and Ansys HFSS and creating automation scripts to interface with the applications.
- Wrote a variety of Python tools with GUIs to automate large parts of the design engineering workflow.
- Designed web-based portals to automate part of the design engineering workflow.
- Used data science programming tools to identify issues with models and systems.
- Software tools include Python, MariaDB, Microsoft Azure, JMP, AWR Microwave Office, Ansys HFSS, Excel, HTML, CSS, Typescript, Javascript, Windows COM interface.
- Some Python packages used: PyQt5, matplotlib, pandas, numpy, OpenPyXL, SciPy, SQLAlchemy.

Electrical Consulting Engineers (ECE) **Charlotte, NC**
Engineering Intern **May 2022 – August 2022**

- Worked on creating, editing and reviewing official engineering drawing for substation and relay equipment. Used AutoCAD and the Microsoft office suite.
- Wrote and edited contracts for bids on hardware relating to substation and relay equipment for several current and future projects. Heavily used Adobe Acrobat to edit PDFs.
- Programmed SEL relays and RTAC equipment using ACSELERATOR QuickSet and ACSELERATOR RTAC.

South Carolina Governor's School for Science and Math **Hartsville, SC**
Student Assistant **June 2019 – July 2019**
June 2021 – July 2021

- Student Assistant at an overnight week-long STEM summer camp for five weeks over two summers.
- Worked closely with industry professionals and campers to teach multiple STEM topics. Was responsible for the campers attending the camp including taking roll and having shifts to monitor them.
- Taught game design using the Unity 3D engine and C#. Campers were taught to create games using 2D and 3D assets and program the games in C#. The games were presented to the camp at the end of the week.
- Taught the fundamentals of robotics to campers using the Arduino microcontroller and the C++ language. The campers were taught how to solve various robotics problems including navigating a maze using sonar, line following using IR sensors and configuring different drivetrains.

Clemson Creative Inquiry Research **Clemson, SC**
Researcher **June 2018 – August 2018**

- Programmed a modified Roomba using Python to navigate obstacles using dead reckoning. The Roombas sensors and motors were read from and controlled wirelessly using a Raspberry Pi over a local network.
- The movement and pathfinding algorithms created were written into an easy-to-use API for future research on robotics pathfinding.

Projects

Clemson Esports

- ❑ An officer for the club for 2 years. The club has over 400 members and is one of Clemson's largest student organizations. Mainly assist with management of the club administration and rules.
- ❑ Technology lead for the club. Wrote several bots using the Python Discord API to solve problems like automatic transcript checking for players and an automated reimbursement system. These bots run on an AWS server.
- ❑ Instrumental in the website design for the club, created a backend that uses NodeJS to pull player information from the Discord API to automatically update the website with current roster information.

Computer Vision

- ❑ Various projects were completed from using convolution to apply filters, optical character recognition, region detection, contour detection, motion tracking and ranged image segmentation.

VHDL

- ❑ VDHL was used to create a 16-bit 4-instruction processor with 8 registers and an adder and subtractor.
- ❑ A 16-bit booth pair multiplier was also created that efficiently multiplied two 8-bit numbers.

Operating Systems

- ❑ Created a thread management API in C. The API could create threads, yield and join threads. It was also capable of thread synchronization using Mutex locks and condition variables. The API also has preemption built in, using a queue system and an interrupt timer.
- ❑ Created a memory management system to allocate and deallocate dynamic system memory. It uses a BiBOP (Big Bag of Pages) style allocator using segregated free lists.
- ❑ Created a RAID array recovery tool for the FAT file system that reads in data from disk images and recovers the corrupted data.