

EDUCATION

University of Maryland, College Park
B.S. Physics
College Park Scholars

Graduated May 2023
GPA: 3.3

RELEVANT SKILLS & COURSEWORK

- * PHYS165 - Programming and Modeling in Physics
- * PHYS276 - Experimental Physics II (Electricity and Magnetism)
- * PHYS375 - Electromagnetic Waves and Optics Lab
- * PHYS485 - Electronic Circuits Lab

Frameworks/Languages: Django, Python, Matlab, C++, JavaScript, HTML, CSS

Editors: Visual Studio Code, Spyder IDE, Arduino IDE, Jupyter Notebook, Microsoft Excel

Python Data Science Libraries: Matplotlib, NumPy, Pandas, SciPy, TensorFlow

Miscellaneous: Git/GitHub, Linux and Windows Terminals, AWS S3, PostgreSQL, HTTP Protocols and Status Codes

Self-Studies: Computer Networking, Data Structures & Algorithms

PROJECTS

Django - Personal Blog

- * Created a personal blog using the Django Framework where one can make a profile and blog posts with full CRUD functionality
- * Used CSS and HTML for the frontend, Python for the backend, and implemented Django REST libraries to create a custom API that the frontend consumed. API also allows future scalability and token authentication. Utilized PostgreSQL for the database and AWS S3 for file storage.
- * Deployed the project via Github hooks to a Linode host, a Linux Virtual Machine, with Apache as the backend server

Automated Temperature Data Acquisition to Calculate Electromagnet's Resistance

- * Used an Arduino microcontroller, programmed with C++, to drive modulated current through a transistor and read temperature data from a thermistor
- * Fit the data to relevant equations to derive the electromagnet's resistance

Obstacle Avoidance using Arduino Microcontroller

- * Programmed an Arduino, using the Arduino IDE and C++, to collect data from Ultrasonic and IR sensors
- * Used the data to calculate the distance to various obstacles

Randomized Projectile Motion Game

- * Wrote a Python Script using the Spyder IDE and Python data science libraries (Matplotlib, Pandas, NumPy, and SciPy), to plot randomized trajectories for a projectile
- * Players then guessed the values of the variables in the projectile equations using the Position v. Time data from the trajectory

Automated Frequency Measurement for Sodium (Na) Discharge Lamp

- * Used Matlab to program and drive a servo-motor as well as collect data from a photodiode sensor in a Michelson interferometer. The interferometer, a series of reflecting mirrors, split and recombined a light beam emitted from a Na Lamp
- * The servo-motor altered the distance between mirrors, and the photodiode measured the beam's intensity
- * Plotted Intensity v. Distance between Mirrors and calculated the two Na frequencies in the beam

WORK EXPERIENCE

Server at Olive Garden

2/23 - 5/23

- * Dealing with a high stress environment pushed me to develop strong stress management and mental organizational skills
- * 'Taking the guests' orders and working in a kitchen (with no prior experience) helped strengthen my listening and communication skills

Mover for Lucia's Fine Furniture Moving Help

6/22 - 8/22

- * Coordinated a team of movers, thus gaining leadership and coordination experience.
- * Communication skills were also strengthened as I often explained the plan to other employees for each moving operation

Physics Tutor (Volunteer)

2/18 - 6/18

- * Taught AP Physics AB to peers after school hours
- * Learned how to effectively communicate technical concepts

Habitat for Humanity (Volunteer)

2/18 - 6/18