Leo Berman

Philadelphia
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Education

Temple University

BS Computer Engineering | Philadelphia, PA | (Expected December 2024)

- GPA: 3.99, Dean's List
- Coursework: Data Structures and Algorithms, Microcontroller Programming in Embedded Systems, Signal Processing, Machine Learning, Stochastic Processes, Data and Computer Communication

Experience

Particle Physics Researcher, Temple University 05/2023 - 08/2023

- Collaborated with a team of physicists to optimize a portion of the MOLLER (Measurement Of Lepton Lepton Elastic Reaction) experiment.
- Developed and debugged open-source data collection software, WaveDump using C to automate the process of data acquisition to data entry from FPGA digitizers.
- Collected data using a fast digital detector emulator to emulate dead time and a fast FPGA digitizer to acquiesce and convert the signal for data analysis.
- Created script prototypes for emulating signals to be used at a particle accelerator using Python.
- Modeled spectrums for signal emulation using the Monte Carlo method, and analyzed data by plotting, and finding appropriate Gaussian approximation using MATLAB's signal processing toolkit.

Engineering Scientific and Technical Intern, PennDOT 05/2022 - 08/2022

- Worked with interdisciplinary engineering teams to gather, process, and present data on the implementation of infrastructure projects.
- Surveyed physical sites to assess MASH (Manual for Assessing Safety Hardware) compliance.
- Documented checkpoints and data for efficient project tracking and management.

Math Consultation Center Supervisor, Temple University 12/2022 - Current

- Manages the Math Consultation Center for multiple tutors and up to 150 students.
- Tutors in math courses: Algebra, Precalculus, Differential Equations, Calculus 1,2 and 3.
- Supervises tutors, offers guidance for enhanced student assistance.

Projects

Upcycling Treadmill to Web-Controlled Walk Pad (Writeup)
Repurposed a treadmill into a website-controlled walking pad using an Arduino and a Raspberry Pi. Languages used include Arduino, Python (Flask), HTML, and JavaScript.

Multivariate Gaussian Classifier (Writeup)
Used Bayesian decision making to implement a multivariate Gaussian classifier in Python. Utilized tools such as JMP and Scikit-learn to debug and compare.

Small Business Website (Source Code)
Built a website which included a scalable sourdough calculator in HTML and JavaScript to support my small business.

Key Skills

Languages: Python, C/C++, HTML, JS, LaTeX, Arduino, MATLAB, Assembler, Verilog
Technologies: Git, AWS, Jira, JMP, Autodesk, UPS WorldShip, QuickBooks, Microsoft Office

Certifications

Google Technical Support Fundamentals (Coursera), Machine Learning with Python: Fundamentals (LinkedIn), Machine Learning Foundations: Statistics (LinkedIn)