Mark Van Selous

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Education

- University of Maryland, College Park, MD — Expected Graduation: May 2022
- B.S., Physics and B.S., Mathematics (Double Major) — 3.65 GPA
- Two Times Angelo Bardasis Memorial Scholarship Recipient
- President's Scholarship Recipient
- Completed Coursework (Highlights): Quantum Mechanics 1, Statistical Thermodynamics, Mathematical Methods of Statistics, Transform Methods, Abstract Algebra
- Graduate Coursework: Convex Optimization (Through StanfordOnline)

Programming Experience (visit https://mvanselous.github.io/personal_website/)

Applications

- machine learning, deep learning, web scraping, threading, multiprocessing, GPIO programming, data visualization, wavelet analysis, image processing, database management, game development, web development, GUI frameworks, quantum computing

Languages

- Python: PyTorch, TensorFlow, Pandas, CSV, Itertools, Requests, Beautiful Soup, JSON, Matplotlib, Seaborn, Flask, Tkinter, PyWavelets, Scaleogram, Qiskit
- MATLAB
- C and C++, Arduino
- GIT, Unix, PowerShell
- HTML5, CSS, JavaScript, LaTeX

Hands-On Experience

- Raspberry Pi, Arduino
- AutoCAD: Inventor Pro and Fusion 360
- 3D Printing, Laser Cutting, Soldering
- Circuit design, building, and troubleshooting

Research Positions

Britton Lab at the Joint Quantum Institute, Research Assistant — **9/20 – –**

- Our work was striving to design a more scalable quantum computer with photonic qubits.
- I assisted (remotely) by using python to determine the frequencies of thermal drift in a roughly 1550 nm laser via wavelet analysis.

Maryland University Training Reactor (MUTR), Simulation Programmer and Technician — **5/19 – 12/19**

- Programmed an interactive status board for the MUTR and its experimental ports.
- Designed & developed simulations of the MUTR. They were applied to a ramp analysis.
- Developed an algorithm and accompanying GUI for calculating control rod worth curves. This software has been written into NRC approved procedures for an annual recalibration.
- Experienced in operating and/or repairing fluorometers, spectrophotometers, sodium iodide detectors, neutron meters, ion meters, and geiger counters.
- NRC Trustworthiness and Reliability License: unescorted access to radioactive materials.
- Official Training: Radiation Producing Devices, Materials; Radiation Facilities LINAC.

ISS-CREAM Research Team, Laboratory Assistant — **10/18 – 2/19**

- Assisted with hardware repairs, and drawing electrical schematics

Volunteer Experiences

Eagle Scout, Boy Scout Troop 1776, Titusville NJ — **9/11 – 4/18**

- Designed and constructed three rabies tables for the Ewing Health Department

Founder, Hopewell Valley Central High School Chess Club — **5/15 – 6/18**