Nelson Lojo

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**Education**

**University of California, Berkeley** 08/2020 – present

Bachelor of Arts: Computer Science, Minor: Math

**Relevant Coursework: CS W169A:** Software Engineering**, CS 61A, CS 61B, CS 61C:** Functional Programming, Data Structures, Computer Architecture, **CS 70:** Discreet Mathematics and Probability, **MATH 128A:** Numerical Analysis, **MATH 104, MATH 185:** Real and Complex Analysis, **MATH 113, MATH 110:** Abstract Algebra, Linear Algebra

**Skills**

**Languages:** Python, Ruby, Java, Mathematica, MATLAB, Julia, SQL

**Libraries:** PyTorch, Numpy, Matplotlib, Rails, RSpec, PyMongo, SQLAlchemy

**Cloud Services:** AWS Lambda Functions, Heroku PaaS, Railway PaaS

**Professional Certifications**

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| * MOS: Windows Office Word * MTA: Windows Operating System Fundamentals * MTA: Networking Fundamentals * MTA: Security Fundamentals | * MTA: Mobility and Device Fundamentals * MTA: Introduction to Programming Using Python * MTA: Introduction to Programming Using JavaScript * MTA: Introduction to Programming Using Java |

**Experience**

**UC Berkeley Engineering Research Centers** 08/2021 – present

*Course Infrastructure Developer*  Berkeley, CA

* Built containerized automatic grading tools and lightweight-scripting tools for question writing to standardize data generation and optimize data flow.
* Collaborated with a small team to interface with Computer Based Testing platforms PrairieLearn and Canvas LTI and to comply with POSIX standards.

**John H. Francis Polytechnic Cyberpatriot Club** 03/2017 – 06/2020

*Mentor, Club President, Team Captain, Member* Sun Valley, CA

* Taught fundamentals of cybersecurity and Python development to club members, which included control structures, functions, and classes in the context of securing workstations and servers.
* Organized the finances, curriculum, and logistics of a club of approximately 25 members competing in the CyberPatriot competition.
* Led teams of 3-5 competitors by developing tools, organizing logistics, and conducting knowledge transfers.
* Configured and secured virtual Windows and Linux servers and workstations operating Nginx, IIS, FTP, Samba, Active Directory, and SSH services with PowerShell, DOS Command Prompt, and Bash.
* Designed, constructed, and configured simulated network architectures in Cisco Packet Tracer using a Cisco IOS shell.

**Projects**

**Scoring Engine** 06/2020 – 05/2021

* Used Python to create monitoring application that reports a team’s score in a virtual machine to a central server to simulate the CyberPatriot competition.
* Uses MongoDB through the PyMongo API for data persistence and the Flask API to serve a web scoreboard.

**Math Program** 12/2020

* Collaborated with a team of 8 others with the goal of providing unlimited configurable math practice problems to students and instructors through a Python web app.
* Worked on backend processing to create question data structures and refactored code to improve performance and maintainability, which required weighing technical debt against greater flexibility and scalability of service to ensure a net benefit.

**Published Research**

**“Teaching Test-Writing as a Variably-Scaffolded Programming Pattern,”** ITiCSE 2022 Dublin 07/2022

* Explored the use of an experimental tool developed for CS1 concepts (the Faded Parson’s Problem) in teaching an advanced development process (test writing).
* Developed software to verify feasibility of deployment.
* Presented work at international conference ITiCSE 2022 in Dublin.