Maya Wallach

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PERSONAL

Date of Birth: September 10, 2005
Place of Birth: Richmond, VA

EDUCATION

Michigan State University, East Lansing, MI
BS Physics
Aug 2021 - May 2024
Graduated with Honors

RESEARCH/WORK EXPIRENCE

FermiLab, Batavia, IL
May 2023 - present
Student Researcher

- Use Machine Learning models for Identifying/Classifiying tracks in a bubble chamber
- Faster R-CNN used for identification and DCGAN for data generation
- Project page: here

IRIS-HEP @ Davidson College, Davidson, NC
May 2022 - August 2022
Undergraduate Fellow

- Track Classification @ AT-TPC using Unsupervised Learning methods
- Presented at the annual Division of Nuclear Physics meeting in 2022

Los Alamos National Lab, Los Alamos, NM
September 2021 - September 2022
Undergrad Research Assistant

- Use computational methods to simulate the k-L turbulance and Rayleigh-Taylor models

Facility for Rare Isotope Beams, East Lansing, MI
August, 2020 – present
Undergrad Research Assistant

- Predicting unstable particle radii using computational methods

Michigan State University
June 2020 – August 2020
High School Physics Intern

- Studied Zeeman effect using Python and derivation

PROJECTS

KlaudOS
Klaud themed hobby operating system
- Double Stage bootloader
- Klaud file system
- Interupts/FPU support
- Interactive shell with commands
- Languages: C and x86 asm
- Project page: here
- Demo video: here

Klaud File System
Klaud themed file system
- UNIX like commands (mkdir, cd, ls, etc)
- Based off of FAT file system
- Now supported in in KlaudOS
- Languages: C
- Project page: here

KlaudOS Website
The official KlaudOS Website
- HTTP web server in C
- Gives information on KlaudOS
- Languages: C, HTML, CSS
- Project page: here

Number Station Identification
A program that identifies number stations
- CNN used for classification
  - Built from scratch (only using NumPy)
- Interactive GUI made with PyQt5
- Languages: Python
- Project page: here

Personal Website
Static Portfolio Website
- Languages: HTML, CSS, JavaScript
- Website: here
- Project page: here

Solved CrackMes
A repo of some crackme's I've solved
- Languages: C
- Project page: here

ONLINE CERTIFICATIONS

Capstone: Retrieving, Processing, and Visualizing Data with Python
Issued July 2019
- Learned Data Analysis in Python
- Credential ID: coursera.org/verify/Q6KSBH5C8NE2

Cybersecurity and Its Ten Domains
Issued July 2019
- Gained skills in Cybersecurity, Crytography, INFOSEC
- Credential ID: coursera.org/verify/ZASYQPZ6T43W

Machine Learning with Python
Issued July 2019
- Became proficent in many Machine Learning algorithms such as KNN, linear & logistic regression, decision treesm and more
- Credential ID: coursera.org/verify/WRFYSASW8P9A

Using Databases with Python
Issued July 2019
- Learned Database management in Python and Object Orented Programming
- Credential ID: coursera.org/verify/Y3EW6VC2EHY9

Using Python to Access Web Data
Issued July 2019
- Learned basics of web scraping and regular expressions
- Credential ID: coursera.org/verify/LP2FME89XNZ9

Python Data Structures
Issued June 2019
- Learned and applied Data Structures in Python
- Credential ID: coursera.org/verify/H9F9XY37E5AK

SKILLS

Programming Languages – Python (5 years), C/C++ (5 years), Bash (1 year), R (3 years), JavaScript (4 years), HTML/CSS (4 years), Rust (1 year), x86 Assembly (1 year)
Frameworks – Pytorch (3 years), Tensorflow (3 years), scikit learn (3 years), OpenCV (4 years)

Computer Skills – Linux (Debian and Arch) Operating Systems (4 years), Windows Operating systems (10 years), Git (4 years), Microsoft Office (5 years), LibreOffice (4 years)

Other – Ghidra (1 year), Radare2 (1 year), IDA Pro (1 year)