Jacob **Lawson**

Contact

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jacob-lawson-meng

Website

jlawson.xyz

Professional Skills

Mathematical Modeling
Data Analysis
Machine Learning
CNNs
GANs
Google Colaboratory
MS Powerpoint
Laser Safety

Soft Skills and Strengths

Creativity
Curiosity
Explaining Concepts
Problem Solving
Time Management
Flexibility
Self Confidence
Leadership
Good Listener
Patience

Other Interests

- Swimming
- Gaming
- Podcasts
- Music
- Gym
- Movies

EDUCATION

2022-2023

Master of Engineering — Ithaca, NY
Cornell University
Engineering Physics
Masters of Engineering Project: Applying Convolutional Neural Networks (CNN) and Generative Adversarial Networks (GAN) to interferometry data analysis in the Laboratory of Plasma Studies at Cornell to improve accuracy and speed up data output with Python.
Coursework: Focused on Electrodynamics/Materials Physics, and Stochastic Optimization/Machine Learning.

2018-2022

Bachelor of Science — Ithaca, NY
Cornell University
Engineering Physics
GPA: 3.483
Deans List: Fall 2018, Spring 2019, Fall 2019, Fall 2020, Spring 2021, Fall 2021
Relevant Courses: Mathematical Physics, Honors Introduction to Analysis, Intermediate Quantum Mechanics, Quantum Information Science, Quantum Infomation Hardware, Data Structures and Functional Programming, Introduction to Machine Learning.

WORK EXPERIENCE

2018-2022

Research Assistant — Ithaca, NY
Cornell University Laboratory for Plasma Studies (LPS)
- Operated a laser to collect experimental data of gas densities using planar laser induced fluorescence (PLIF)
- Developed a more accurate calibration method for the gas density data collected using Python

2022

TA/Grader - Intermediate Mathematical Physics — Ithaca, NY
Cornell University
- Held Office Hours, Created Homework Solutions, and Graded Homeworks

2022

C++ Code Developer — Online
Civilization 5 LekMod Development Team
- Edited and compiled C++ Civilization 5 source code to implement game changes

Projects

2022-2023

StockBot — Online
Stock Portfolio Management Algorithm
- Creating a stock portfolio managment algorithm in python, using machine learning through pytorch
- Emphasis on generative modeling (GAN), to predict which stocks should be invested in

Leadership Experience

2018-2022

Cornell University Varsity Swim Team — Ithaca, NY
Cornell University
- Awarded Academic All-Ivy for the 2021-2022 season
- Awarded Men's Swimming Hardest Worker Award for the 2018-2019 and 2021-2022 seasons
- Qualifying member of the Ivy League Championships team every year

</> PROGRAMMING LANGUAGES

- **Python**: Advanced
- **Python - PyTorch**: Intermediate
- **Python - Qiskit**: Basic
- **C/C++**: Basic
- **OCaml**: Intermediate
- **Java**: Basic
- **HTML/CSS**: Basic
- **Matlab**: Basic

PUBLICATIONS

Research Article
2022

Measurements of the imploding plasma sheath in triple-nozzle gas-puff z pinches, E.S. Lavine, S.V.R. Rocco, W.M. Potter, J. Angel, E. Freeman, J.T. Banasek, J. Lawson, J.B. Greenly, H. Wilhelm, D.A. Hammer, and B.R. Kusse, *Physics of Plasmas*, doi 10.1063/5.0084352