

# Jacob Lawson

## Contact

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## 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
- Music
- Gaming
- Gym
- Podcasts
- Movies

## EDUCATION

2022-2023	<b>Master of Engineering</b> <b>Cornell University</b> <i>Engineering Physics</i> <b>Masters of Engineering Project:</b> 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. <b>Coursework:</b> Focused on Electrodynamics/Materials Physics, and Stochastic Optimization/Machine Learning.	📍 Ithaca, NY
2018-2022	<b>Bachelor of Science</b> <b>Cornell University</b> <i>Engineering Physics</i> <b>GPA: 3.483</b> <b>Deans List:</b> Fall 2018, Spring 2019, Fall 2019, Fall 2020, Spring 2021, Fall 2021 <b>Relevant Courses:</b> Mathematical Physics, Honors Introduction to Analysis, Intermediate Quantum Mechanics, Quantum Information Science, Quantum Information Hardware, Data Structures and Functional Programming, Introduction to Machine Learning.	📍 Ithaca, NY

## WORK EXPERIENCE

2018-2022	<b>Research Assistant</b> <i>Cornell University Laboratory for Plasma Studies (LPS)</i> <ul style="list-style-type: none"><li>• Operated a laser to collect experimental data of gas densities using planar laser induced fluorescence (PLIF)</li><li>• Developed a more accurate calibration method for the gas density data collected using Python</li></ul>	📍 Ithaca, NY
2022	<b>TA/Grader - Intermediate Mathematical Physics</b> <i>Cornell University</i> <ul style="list-style-type: none"><li>• Held Office Hours, Created Homework Solutions, and Graded Homeworks</li></ul>	📍 Ithaca, NY
2022	<b>C++ Code Developer</b> <i>Civilization 5 LekMod Development Team</i> <ul style="list-style-type: none"><li>• Edited and compiled C++ Civilization 5 source code to implement game changes</li></ul>	📍 Online

## Projects

2022-Present	<b>StockBot</b> <i>Stock Portfolio Management Algorithm</i> <ul style="list-style-type: none"><li>• Creating a stock portfolio management algorithm in python, using machine learning through pytorch</li><li>• Emphasis on generative modeling (GAN), to predict which stocks should be invested in</li></ul>	📍 Online
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## Leadership Experience

2018-2022	<b>Cornell University Varsity Swim Team</b> <i>Cornell University</i> <ul style="list-style-type: none"><li>• Awarded Men's Swimming Hardest Worker Award for the 2018-2019 and 2021-2022 seasons</li><li>• Qualifying member of the Ivy League Championships team every year</li><li>• Consistent member of the in-season travel team</li></ul>	📍 Ithaca, NY
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## </> PROGRAMMING LANGUAGES

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

## PUBLICATIONS

<b>Research Article</b> 2022	<b>Measurements of the imploding plasma sheath in triple-nozzle gas-puff z pinches</b> , 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, <i>Physics of Plasmas</i> ,  10.1063/5.0084352
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