

EDUCATION**University of Wisconsin – Madison** | *Cumulative GPA: 3.5 /4.0***Sept. 2022 – May 2026***Bachelor of Science, Computer Science and Data Science**Madison, WI*

Selected Coursework: Algorithms, Data Structures, Statistical Modeling &, Linear Algebra, Data Ethics & Policy, Calculus, Machine Organization & Programming

EXPERIENCE**Machine Learning Engineer Intern** | *Python, Statistical Modeling, Power BI***May 2024 – Present***Rodgers Machinery Company**Portland, OR*

- Improved operational efficiency and resource allocation by developing **predictive models** for churn, performance, inventory, and utilization metrics.
- Analyzed large datasets using Python and Excel to uncover critical trends and patterns and communicated actionable metrics through Microsoft Power BI visualizations.

ML Research Assistant | *Python, HTCondor, Shell Scripting***Sep. 2022 – May 2024***Dane Morgan Materials Science Research Group**Madison, WI*

- Achieved precise generation of novel matrix structures by enhancing the accuracy of compression and reconstruction using a **variational auto-encoder**.
- Realized a **20%** increase in validation accuracy by expanding and cleaning the materials dataset (50k → 415k rows).
- Enhanced computational throughput during training by utilizing GPUs from the HTCondor Software Suite.
- Applied convolutional neural networks (**CNNs**) to materials datasets and shared them on Cloud Foundry.

Projects Lab Coordinator | *Python, Linux, Astro***Jan. 2024 – Present***Undergraduate Projects Lab (UPL), UW-Madison**Madison, WI*

- Captured real-time monitoring of lab occupancy by implementing a Raspberry Pi and camera setup using the **YOLOv7 computer vision** model, which updates the count on a Discord channel.
- Increased server infrastructure capabilities by maintaining and expanding a **Kubernetes** cluster.
- Developed the lab website using Astro and Tailwind; managed GitHub open-source contributions, issues, and PRs.

PROJECTS**Team Scheduling Manager** | *Rust, Diesel, React, PostgreSQL, Serde, Git***Mar. 2024**

- Enhanced team productivity by building a full-stack task scheduler with **React, Rust, and PostgreSQL**.
- Ensured system safety by implementing robust user authentication, leveraging Rocket RESTful APIs to facilitate secure interaction between the front-end and database.

MIT Quantum Photonic GAN | *Python (Quandela Perceval, PyTorch), Photonic Circuit Design, Git***Feb. 2024**

- Achieved **45%** fidelity by implementing a Quantum Generative Adversarial Network (**Q-GAN**) from scratch using secant descent and vectorized approaches over a single 24-hour session.
- Presented the Q-GAN to a panel of scientists, highlighting its innovative and technical aspects.
- Led a 5-person team to a **Top 3** finish at MIT's IQuHACK 2024, excelling in Quandela's Quantum Photonics Challenge.

Handwritten Code Interpreter | *React, Bootstrap, Express, Java, Git***Sep. 2023**

- Compiled and executed handwritten code from .PNG images using Google OCR and Java Reflections.
- Streamlined image collection and elevated UX by wrapping the interpreter in a front-end built with React and Axios.

ACHIEVEMENTS AND LEADERSHIP**MIT IQuHACK Top 3** | Quantum Machine Learning, Photonic Circuit Design**Feb. 2024****IBM Quantum Excellence Scholar** | Multi-qubit Systems, Noise Mitigation, Superconducting**Jul. 2023****Quantum Computing Club Vice President** | Teaching, Talks (IBM Qiskit, Quantum Hardware)**Feb. 2023 – Present****Hackathon Lead Organizer** | 380+ attendees, 100+ project submissions, and 18K+ in funding**Oct. 2023 – Present****TECHNICAL SKILLS****Languages:** Python, C, Rust, Java, SQL (PostgreSQL, MySQL), R, JavaScript, HTML/CSS**Libraries and Frameworks:** React, Astro, Express, pandas, NumPy, Matplotlib, Scikit-learn, PyTorch, Flask, JUnit**Developer Tools and Platforms:** Shell, Git, Docker, Amazon AWS, MongoDB Atlas, Power BI, Vim, Linux, macOS, Windows