

Nico Salm

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EDUCATION

University of Wisconsin – Madison

Madison, WI

Bachelor of Science in Computer Science, Data Science – GPA: 3.7

Expected December 2025

- Relevant coursework: Data Structures and Algorithms, Object-Oriented Programming, Computer Engineering, Machine Learning, Data Science (Scripting, Manipulation, Analysis, Visualization), Calculus, Linear Algebra

EXPERIENCE

Informatics Skunkworks - Dane Morgan Group

Sep. 2022 – Present

Research Assistant (Materials Informatics) | Python, PyTorch, Scikit-learn, pandas, NumPy, Linux

Madison, WI

- Curated and trained a Variational Autoencoder (VAE) to compress matrix representations, reconstruct inputs from decoded latent space, and generate novel matrix structures to achieve target properties.
- Implemented convolutional neural networks utilizing PyTorch and linear models with Scikit-learn.
- Collaborated with the CHTC team to harness the power of High Throughput Computing (HTC) principles, utilizing the renowned HTCondor Software Suite to maximize computational throughput.
- Refactored machine learning models for materials properties and shared them as cloud resources through the Cloud Foundry infrastructure, boosting accessibility for non-programmer scientists.

IBM Qiskit Global Summer School

July 2023 – Aug. 2023

Quantum Excellence Scholar | Python, Qiskit

Remote

- Hands-on experience with multi-qubit systems, quantum entanglement, super conducting quantum circuit design, and noise mitigation through five intensive labs.
- Distinguished with the 'Quantum Excellence Scholar' certificate from IBM Quantum for exceptional proficiency in both theoretical and practical quantum computing realms.

PROJECTS

Cornucopia | React, Bun/Next.js, MongoDB Atlas, Python, Leaflet Map API, Git

Sep. 2023

- Pioneered a robust framework for neighborhood gardeners and small-scale farmers to collaborate.
- Created a full-stack web application featuring an intuitive UI using React and TailwindCSS; integrated machine learning-driven data analytics and advanced visualizations utilizing Seaborn.
- Awarded Best Agricultural Innovation by John Deere at HackUIowa 2023.

Python Programming Initiative | Python, Flask, Scikit-learn, Scripting, REST APIs, SQL

June 2023

- Acquired hands-on expertise in Python, web scraping, and data science by taking advantage of powerful libraries like Pandas, NumPy, and Matplotlib to perform trend analysis and system optimization.
- Combined front-end technologies (HTML5, CSS, Bootstrap) with back-end frameworks (Flask, SQL) to create and deploy web applications, mastering version control and deployment.
- Crafted Python-based automation scripts with Beautiful Soup and Selenium, enhancing efficiency for tasks. Notably, automated job application submission on LinkedIn, timed emails/SMS, and professional efficiency.

Paper++ | React, Bootstrap, Axios, Node.js/Express, Google OCR API, Java, Git

March 2023

- Designed Paper++ during MadHacks 2023 to parse handwritten user-provided .PNG images (utilizing Google OCR API), execute the handwritten code, and provide output, all through an intuitive front-end.
- Engineered support for compilation of unlimited images allowing realization of complex programs.
- Recognized as a finalist (4th/56) at MadHacks Spring 2023.

TECHNICAL SKILLS

Programming Languages: Python, C/C++, Java, C#, HTML, CSS, JavaScript, SQL

Frameworks: Qiskit, React, Astro, Node.js, Bun

Infrastructure: MongoDB Atlas, Google Cloud, Cloud Foundry

Developer Tools: Git, Bash, Docker, GitHub, Linux, JUnit