

Nico Salm

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EDUCATION

University of Wisconsin – Madison

Madison, WI

Bachelor of Science in Computer Science, Data Science

Expected May 2026

- Relevant coursework: Data Structures and Algorithms, Object-Oriented Programming, Computer Engineering, Machine Learning, Data Science Programming, Statistics, Calculus

EXPERIENCE

Informatics Skunkworks - Dane Morgan & B. Afflerbach Group

Sep. 2023 – Present

Research Assistant (Generative Machine Learning)

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.
- 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.

IBM Qiskit Global Summer School

July 2023 – Aug. 2023

Quantum Excellence Scholar

- 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.

Informatics Skunkworks - Dane Morgan Group

Jan. 2023 – June 2023

Research Assistant (Cloud-Based Materials Informatics)

Madison, WI

- Implemented convolutional neural networks utilizing PyTorch and linear models with Scikit-learn.
- Refactored machine learning models for materials properties and shared them as cloud resources through the Cloud Foundry infrastructure, boosting accessibility for non-programmer scientists.

PROJECTS

Personal Website | Astro, JavaScript, HTML, CSS, Git

May 2023 – Present

- Developed a modern and visually appealing personal website using the Astro web framework, leveraging its component-based architecture and static site generation capabilities.
- Implemented responsive design principles to ensure optimal user experience across various devices, utilizing CSS media queries and layout components provided by Astro.
- Integrated a night mode, enabling a seamless transition between light and dark color schemes.

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.

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

Infrastructure: MongoDB Atlas, Google Cloud, Cloud Foundry

Developer Tools: Git, Docker, GitHub Actions, GitHub Codespaces, Linux, JUnit