Jens Lundsgaard

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Education

University of Wisconsin-Madison **Expected May 2026**

- Bachelor of Science - Computer Sciences & Mathematics
- Relevant Coursework: Programming II, Linear Algebra, Modern Algebra, Introduction to Databases, Elementary Topology

Technical Skills

Languages: Python, Java, JavaScript, HTML, CSS, TypeScript, React, Rust

Tools: TensorFlow, Keras, PyTorch, Docker, Android Studio, Vim, Ubuntu Linux, Visual Studio Code, Wolfram Mathematica, Numpy, Pandas, Matplotlib, Tailscale, SQL

Skills: Topological Data Analysis, Dimension Reduction Techniques, Deep Learning, Loss Functions

Experience

UW-Madison CBML Lab | IVF ML and TDA Researcher **October 2025 – Present**

- Developed a convolutional recurrent autoencoder model with PyTorch to learn human IVF embryo video data.
- Used topological data analysis (TDA) techniques such as persistent homology, path signatures and the TPHATE dimension reduction library for analyzing embedded latent vectors to predict embryo success.
- Designed a custom Docker image to pack up dependencies and run code on 8 university-hosted NVIDIA H200 GPUs.

UW-Madison QQQ Lab | Quantum Architecture Researcher **October 2025 – Present**

- Developed a linter for a cutting-edge quantum architecture specification language known as MAROL using Microsoft VS Code's language server protocol to
- Wrote thorough documentation for the MAROL codebase.

Discovering Freedom | Contract Software Engineering Advisor **January 2025 - Present**

- Developed a website using React, Express, and MongoDB for the nonprofit.
- Advised the board and director on software related tasks, such as buying a domain name and email integration into Google's Gmail.

Projects

Home Server Project | *Ubuntu Linux, Tailscale, Docker, Cloudflare Tunnels* **January 2025 – Current**

- Set up an old computer with Ubuntu Server to use for storage, utility and Folding@Home crowd computing project, with remote access set up with Tailscale and Cloudflare tunnels.
- Used Docker to test images for research, run Folding@Home client and Cloudflare tunnel client.

Chicago Transit Tracker | *Java, Android SDK, Google Maps API, JSoup* **February 2023 – May 2023**

- Implemented the Google Maps API to make a responsive map interface of the city of Chicago and its rail lines, as well as any trains the user is tracking.
- The app tracks 100+ trains in real time using asynchronous classes in Java and JSoup to access the Chicago Transit Authority API.

Arabic Letter Neural Network | *Python, TensorFlow, Keras* **March 2023 – April 2023**

- Designed and trained a neural network to recognize handwritten Arabic letters using Keras and TensorFlow, which can recognize handwritten letters with an accuracy of upwards of 96%.