# Axel Agelii

https://aagelii.github.io
aagelii

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## SKILLS

- **Languages**: Python, C/C++, SQL, Java, LATEX, CUDA, HIP, MATLAB
- **Libraries**: Pandas, PyTorch, Scikit-learn, TensorFlow, Matplotlib, NumPy, Hadoop, Spark
- **Other**: Bash, Git, Google Cloud, Azure Machine Learning

## EXPERIENCE

**Graduate Teaching Assistant** — Madison, WI

- *University of Wisconsin- Madison* — Aug. 2022 - Present
  - COMPSCI 200: Programming I; Intro to programming using **Java**
  - COMPSCI 540: Introduction to Artificial Intelligence, using **Python**

**Data Science Intern** — Houston, Texas

- *PFS Group* — Jun. 2022 - Aug. 2022
  - Utilized feature selection techniques with **Scikit-learn** and **Pandas** to reduce the number of features used to train by **75%** and created predictive models using **Tensorflow** for propensity to pay with an ROC AUC score of **80%.**
  - Presented findings of newly created model performance to team members and executives of company.

**Translator and Researcher** — Taipei, Taiwan

- *National Communication Commission* — July 2019 - Aug. 2019
  - Research assistant that digested materials on 5G and AI policies in foreign countries to aid the Taiwanese Government in policy reports.

## EDUCATION

**M.S. Computer Science** — Madison, WI

- *University of Wisconsin-Madison* — Sep. 2022 – 2024

Relevant Coursework: Machine Learning, Big Data Systems, Data Visualization, Computer Vision, High Performance Computing

**B.S. Computer Science** — Madison, WI

- *University of Wisconsin-Madison* — Sep. 2020 – May 2022

Relevant Coursework: Artificial Intelligence, Database Management Systems, Data Science, Machine Learning, Data Structures, Algorithms, Computer Architecture, Operating Systems

**The Woodlands High School** — The Woodlands, TX

- *High School Diploma* — Aug. 2016 – May 2020

## PROJECTS

**Hand Gesture Recognition in Real-time**
https://github.com/aagelii/hand_gesture_recognition

- Implemented a real-time hand gesture recognition program using **Python, OpenCV, Pandas, NumPy, TensorFlow, Keras, and scikit-learn**.

**High-Performance Computing Research Project- Neural Networks Training Comparison**
https://github.com/aagelii/hpc_neural_net

- Implemented and compared the training of neural networks using CUDA and HIP in a high-performance computing research project, utilizing **C++, OpenMP, MPI, Python, Matplotlib**, and automated the experiments using **Bash**.

**Inspecting Batch Adaptation Policy in Machine Learning Inference Systems**
https://aagelii.github.io/Inspecting_Batch_Policies.pdf

- Conducted a big data systems project analyzing batch adaptation policies for machine learning inference systems, introducing the spread-drop policy.
- Simulated spread-drop policy's performance under various queue distributions using **Python** and **NumPy**.
- Implemented a runtime scheduler using the policy to evaluate its trade-offs in terms of batch size, latency, and throughput.