Aidan O'Brien

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EDUCATION

University of Wisconsin-Madison
Madison, WI

Bachelor of Science in Computer Science
Graduating May 2027

GPA: 3.97, Dean's List

Relevant Coursework: Intro to Artificial Intelligence, Intro to AI for Engineering Research, Intro to Computer Engineering, Computer Organization, Algorithms, Discrete Math, Programming 2 & 3, Linear Algebra, Calc 2 & 3

TECHNICAL SKILLS

Languages: Java, C, Python, SQL, JavaScript, Typescript, HTML/CSS, Bash
Development: React, NodeJS, Firebase, Firestore, Flask, JUnit, Git, MaterialUI, Linux, Postman
Machine Learning: Pytorch, Keras, Sklearn, Numpy, Pandas, Matplotlib, Seaborn, HTC
Experience With: CI/CD, Data Structures, Algorithms, Cloud Development, Deep Learning

EXPERIENCE

Nexus Maintainer/Contributor
Apr. 2025 – Present

ML+X, UW-Madison
Madison, WI

- Contributing to the ML+X Nexus, a curated and evolving ML/AI knowledge hub at UW-Madison, by sourcing, tagging, and integrating advanced machine learning resources.
- Authoring multiple technical entries across datasets, tools, and applications using GitHub workflow including forking, branching, and pull requests.
- Leveraging custom CI piplelines via GitHub Actions to monitor link integrity; debugging false positives and maintaining yaml whitelist.

Artificial Intelligence Research Assistant
Sep. 2024 – Dec. 2024

Informatics Skunkworks, UW-Madison
Madison, WI

- Deployed and analyzed deep learning diffusion models to predict a material's properties.
- Leveraged CHTC High Throughput Computing to efficiently train and evaluate models, thus optimizing resources.
- Enabled material property determination without physical synthesis, increasing efficiency in material science research.

Software Engineering Intern
June 2024 – Aug. 2024

Collectwise
Remote

- Developed full-stack for Collectwise, a Y Combinator-backed debt collection agency powered by generative AI.
- Automated debtor reports by analyzing thousands of Firestore documents with Node endpoints.
- Developed the file upload and download system seen on the website with React and Firebase.
- Utilized Git/Github for version control, collaborative development, and code review, ensuring a smooth workflow.

PROJECTS

ML Kaggle Competitions/Projects | *Python, Sklearn, Pytorch, Matplotlib, Seaborn*   May 2024 – August 2024
- Achieved 98% accuracy predicting numbers in the MNIST dataset with a CNN built with Pytorch.
- Optimized accuracy of survival predictions passengers on the Titanic to 80% using KNeighborsRegressor iterative imputing and hyperparameter tuning on a Random Forest model.
- Predicted and visualized safety ratings for 2,000+ cars with KNN, PCA, and LDA, revealing key safety factors.

Flask Investment Calculator | *Python, SQLite, HTML/CSS, Pandas/MatplotLib, Jinja*   Jan. 2024 - March 2024
- Developed a financial forecasting tool that visualizes investment growth with interactive Matplotlib graphs and stylized year-over-year data tables.
- Stored and retrieved user data with a SQLite while transferring information from Flask backend to HTML frontend

LEADERSHIP

Director
June 2024 – Present

Humorology
Madison, WI

- Leading and managing a team of students in an annual fundraising and theatrical charity competition.
- Coordinated fundraising efforts, thus far culminating in $50,000 raised for a local charity by our team.
- Co-wrote and developed the script for the team's theatrical production, showcasing creativity and ingenuity.
- Developed leadership and project management skills by meticulously ensuring timely completion of team objectives.