David Cui

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Education

Washington University in St. Louis — St. Louis, MO
B.S in Computer Science & Mathematics — *2020 – 2025*

Technical Skills and Relevant Courses

Languages: Python, Typescript, React, Tailwind CSS, Java, Javascript, C++, R/ R Studio, HTML/ CSS
Libraries: Tensorflow, Pytorch, Pandas, NumPy, Keras, Matplot, Scikit-Learn
Database: Mongo DB, SQL, PostgreSQL

Experience

Portal Career Discovery — St. Louis, MO
Lead Machine Learning Engineer — *January 2025 – Present*

- Designing and deploying an end-to-end ML model to revolutionize how individuals discover and navigate careers.
- Leading the transition away from LLMs like Chat GPT to reduce dependency, focusing on in-house ML solutions.
- Performing full-cycle ML operations, including model design, data engineering, model testing, and deployment.

Echo-Sync — St. Louis, MO
Lead Full-Stack WebApp Developer and Machine Learning Engineer — *January 2025 – Present*

- Developing the full-stack web application using MongoDB (database), Typescript + Node.js + Express (Backend), and Typescript + React + Tailwind CSS (Frontend).
- Designing and deploying an end-to-end ML model to revolutionize how individuals experience music at events by handling ML operations such as engineering new datasets and developing recommendation systems for the first MVP.

Engineering Test Kitchen — St. Louis, MO
Lead Machine Learning Engineer — *September 2024 – Present*

- Leading a diverse team of 13 engineers to leverage ML techniques to construct a precise and operational model in a real-world application to streamline the company's process through innovative AI solutions.
- Developing a machine learning model to classify, segment, and count images of stave boards for the largest stave manufacturer in America, which produces staves for barrels used in alcohol fermentation.

Washington University in St. Louis — St. Louis, MO
Rapid Prototype Development and Creative Programming TA — *August 2024 – Present*

- Guided and assisted students with project-oriented programming such as databases, cybersecurity, and full-stack.
- Introduced students to languages such as PHP, HTML, CSS, JavaScript, servers such as AWS, and databases like SQL

Projects

Netflix Recommendation System | *Python, MatPlot, Pandas, Numpy, Machine Learning* *November 2024*

- Built a collaborative filtering model using Netlfix's data obtained from Kaggle to predict user's ratings on unseen movies by leveraging other users' rating patterns. Harnessed a singular value decomposition kit called Surprise to find relationships to help predict, reaching a RMSE value of 0.847.

Melanoma Cancer Classification | *TensorFlow, Python, Keras, Machine Learning* *November 2024*

- Developed an image classification model to identify melanoma from nevus, and seborrheic keratosis from a public database. Built a Convolutional Neural Network (CNN) leveraging ResNet50 with transfer learning for effective feature extraction and classification, achieving a final test accuracy of 71% and training accuracy of 95%.

PaperTrail – Hackathon Project | *Mongo DB, JavaScript, React, HTML/ CSS, ChatGPT API*

- Collaboratively designed and developed a website to assist in managing non-digital transactions by taking or uploading receipts, with data displayed in a user-oriented dashboard via graphs and charts. Utilizing ChatGPT's API to capture and classify images efficiently through prompt engineering to extract specific information such as total transaction.

Full Stack Stock and Crypto Portfolio Manager | *Mongo DB, Flask, JavaScript, React, HTML/ CSS* *November 2023*

- Created a website for users to manage their financial assets such as stocks and crypto currencies by using React and JavaScript for the frontend, Flask and Python for backend, and MongoDB Atlas for the database.

Cat Image Classification | *TensorFlow, Python* *August 2023*

- Integrated a deep neural network in Python from scratch to accurately classify images of cats with precise predictions by achieving 80% accuracy from extensive hyperparameter tuning and gradient descent algorithms.

Passions: Soccer, Rock Climbing, Robotics, Art