

# ADITYA KHOWAL

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## EDUCATION

**University of Washington** - BS, Computer Science, Annual Dean's List Recipient, **GPA 3.8** August 2024

Relevant Coursework:- Intro to Artificial Intelligence, Database Systems, Data Structures and Algorithms, Intro to Data Science, Intro to Programming, Client-side development, Foundations of information

## EXPERIENCE

**Artificial Intelligence Research Intern | University of Missouri** May 2023 - Present

*NSF funded research on AI optimization for blood demand*

Python | PyTorch | matplotlib | seaborn | AI optimization

- Developed and tested a **machine learning model** using **PyTorch** for blood inventory management resulting in a **15% reduction** of blood wastage in simulated tests.
- Researched **AI-based solutions** to hospital supply chain problems with stochastic programming and deep learning leading to a **20% improvement** of blood shortage in simulations.
- Conducted an extensive literature review and exploratory analysis using seaborn and matplotlib.

**Backend Software Engineering Intern | Bond Intelligence** June 2021 - September 2022

*Financial Dashboard for Bond Investment information*

React | JavaScript | Python | SQL | Docker | Kubernetes

- Developed and deployed a user-friendly **full-stack web application** using **React** that enabled over 10,000 users to easily access demographic information for municipal bonds.
- Implemented **JavaScript** and **Chart.JS** to convert complex bond data into visually appealing charts and diagrams resulting in a **40% increase** in user engagement.
- Optimized performance by utilizing **SQL queries** to clean up redundant data and optimize views resulting in a **70% decrease** in web app load times.

**Python Lead | Stanford 106A** Jan 2021 - Jan 2022

*Section lead for Stanford intro Python class*

Python | Data Structures | OOPS | Teaching | Organization | Communication

- Led weekly discussion section to 7-10 students for Stanford's introductory CS 106A python course.
- Provided **debugging** & conceptual help at weekly office hours and campfire sessions.
- Taught concepts including programming fundamentals **object-orientation**, **data structures**, and **recursion**.

## PROJECTS

**NanoGPT - Philosopher edition** Python | PyTorch | Transformers | Jupyter

- Developed a fork of NanoGPT using **Python** and **PyTorch** to analyze the philosophical works of Immanuel Kant and generate "philosophical content".
- Trained and fine-tuned the model with a dataset of over **50,000 pages** from Kant's books and essays achieving an impressive average perplexity score of 1084 and passing through GPTZero.

**Amazon Sentiment analysis** Python | NLTK | NLP | Transformers

- Developed a natural language processing Python project utilizing **NLTK's VADER** and Huggingface Roberta Transformers to build a sentiment analysis classifier for Amazon customer reviews.
- Processed over **10,000** customer reviews using Python for data cleaning feature extraction and model training to enable effective sentiment analysis of Amazon Reviews.

**Tech Layoff Tracker** R | Data Science | ShinyApp

- Developed a comprehensive tech industry layoff tracker and report using **R** and **ShinyApp**. The tracker includes an interactive map of layoffs and an in-depth analysis of layoff trends.
- Generated a data-driven analysis for a dataset of over **40,000 rows**, identifying key layoff trends and compiling relevant insights to help companies make informed decisions.

## TECHNICAL SKILLS

**Front End** | React, JavaScript, NodeJS, CSS, Flutter

**Back End** | Python, Java, C++, SQLite, MySQL, R

**Technologies** | Jest, Kubernetes, Docker, Git, npm, Firebase, GitHub