Aditya Khowal

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Education

University Of Washington — Seattle, WA

Informatics - Software Engineering & Data Science, Minor in Statistics — *06/2026*

- **GPA:** 3.8 - 3x Deans list | First-Gen/Immigrant Student | rAIse lab for responsible AI in Systems & Experiences
- **Relevant Courses:** Data Structures and Algorithms, Data Science, Artificial Intelligence, Recommendation and Retrieval systems, Database Systems, Front-End development, Algorithms & Computational Complexity, Project Capstone, Compilers, Design Methods, Machine Learning

Technical Skills

Language & Framework: Python, SQL, Java, HTML, CSS, LaTeX, C++, Golang | *Learning:* Rust, Kotlin
Frameworks & Technologies: PyTorch, Tensorflow, Pandas, numpy, NLP, Big Query, Kubernetes, Docker, Git, REST Api, Computer Science
Skills: Object oriented design, Vim user, Spec/Documentation Writing, fast learner, analytical thinking, collaboration, leadership

Experience

Artificial Intelligence Research Intern — May 2023 – August 2023

University of Missouri — *Columbia, MO*

- Used a data-driven stochastic time series model to predict and derive novel insights regarding the blood supply chain and optimize ordering policy in Python.
- Reduced simulated blood waste by 15% through the development and testing of a machine learning model using tensorflow and gurobipy for blood ordering policy.

Highschool Backend Software Engineering Intern — June 2021 - September 2022

Bond Intelligence/OpenEXA — *Seattle, WA*

- Developed full-stack web application using Python, React, and Google BigQuery to provide user-friendly access to critical municipal bond data for over 10,000 clients, increasing engagement 40%
- Decreased web app load times by 70% through pre-processing unstructured data through SQL queries and automating Data Conversion
- Deployed webapp on google cloud platform using Docker and Kubernetes for scale and security.

Community & Leadership

SWECC Officer - External Head — August 2023 - Present

Software Engineering Career Club — *Leadership, Organization, Communication*

- Lead the external team through bi-weekly meetings and help with organizing club events. Managed over 1500$ in budget via sponsorship and grant writing. Spearheaded and initiated meeting plans like linked in workshops and resume reviews

Python Lead — Jan 2023 - March 2023

Stanford 106A — *Python, Data Structures, OOPS, Organization*

- Lead weekly sections teaching 10 students basics of programming through Stanfords code in place program. Created slides and animations to review content.

Projects

uDub Search | *Python — PhP — Natural Language Processing — Collaborative Recommendation* — Current Project

- Developed a search and recommendation system for the University of Washington subreddit with over 4,500 posts
- Implemented tokenization, stop word removal, stemming, indexing and vector representation of documents using Python NLP libraries
- Designed a collaborative filtering recommendation system in python and PHP that learns from search and click data to personalize recommendations in real time.

Husky Hold 'Em | *Go — System Design — Docker* — Current Project

- Developing poker interface using Go, enabling participants to submit coded poker bots to compete in scheduled tournaments for Algorithmic Trading club.
- Writing python simulation library for participants to leverage, handling gameplay logic, with server side docker containers running their code.

Tech Layoff Tracker | *R — Data Science — ShinyApp* — Winter 2023

- Developed a comprehensive tech industry layoff tracker and report using R and ShinyApp.
- Identified key layoff trends and compiled relevant insights by generating a data-driven analysis for a dataset of over 40,000 rows to help companies make informed decisions.

Hybrid Recommender Systems for Scholarly Papers | *Python — TensorFlow — Scikit-learn — NLP* — Fall 2023

- Conducted a self research project on hybrid recommender systems for scholarly papers using content-based filtering and deep learning techniques.
- Implemented TF-IDF and Word2Vec models to extract features from paper abstracts and calculated cosine similarity to generate recommendations.

NanoGPT Philosopher | *Python — PyTorch — Transformers — Language Model* — Summer 2023

- Generated philosophical content by developing a fork of NanoGPT using Python and PyTorch to analyze the philosophical works of Immanuel Kant using NLP and vector representations.
- Achieved an impressive average perplexity score of 1084 by training and fine-tuning the model with a dataset of over 50,000 pages from Kant's books and essays and passing through GPTZero.