

# Aditya Khawal

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## EDUCATION

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**B.Sc Informatics, Minor: Statistics** | 3.8 GPA, 5x deans list 06/2025 | University of Washington  
**Relevant Courses:** Data Structures & Algorithms, Data Science, Artificial Intelligence, Search & Recommendation systems, Database Systems, Front-End development, Algorithms & Computational Complexity, IOS Mobile App Dev  
**Skills:** Python, SQL, Java, HTML, CSS, LaTeX, C++, Golang, Object-oriented design, Vim user, Spec/Documentation Writing, NLP, Big Query, Kubernetes, Docker, Git, Swift, C | *Learning:* Rust, OCaml

## EXPERIENCE

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**Incoming Software Development Engineer Intern** Amazon June 2024 - September 2024  
**Artificial Intelligence Research Intern** University of Missouri May 2023 – August 2023

- Reduced simulated blood waste by **15%** by developing a data-driven **stochastic time series model** in Python to predict blood usage and optimize ordering policy through ML model testing with **gurobipy**.
- Achieved **80%** confidence in decoding nanopore signals by evaluating data storage techniques and reverse engineering signals using machine learning models like **Guppy** and **Chiron**.

**Software Engineering Intern** Bond Intelligence/OpenEXA June 2021 - September 2022 Seattle, WA

- Increased user engagement by **40%** by developing a full-stack web application in **Python, React, and Google BigQuery**, providing **10,000+** clients with user-friendly access to critical municipal bond data.
- Optimized web app performance by decreasing load times **70%** through SQL-based data pre-processing, **Docker** containerization, and **Kubernetes** deployment on **Google Cloud Platform** for enhanced scalability and security.

## PROJECTS

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**Monkey lang VM** | *Rust — Systems — Assembly* In Development

- Developing a **language interpreter** for the Monkey lang programming language using **Rust**, leveraging computer architecture and tiny assembly for optimized bytecode execution with rigorous testing.

**Lisp Interpreter in OCaml** | *OCaml — Compiler Design — Functional Programming* In Development

- Developing a **Lisp interpreter** in OCaml, grounded in the principles of **functional programming** and **compiler design**, to execute Lisp programs with support for fundamental operations, boolean logic, and symbol processing.
- Implemented core Lisp functionalities, including **environment handling**, **variable bindings**, and **function definitions**, by following a structured approach to interpreter design and leveraging OCaml's powerful pattern matching and functional capabilities.

**Husky Hold 'Em** | *Go — System Design — Docker* Winter 2024

- Developing a poker interface in **Go**, enabling participants to submit coded bots for scheduled tournaments in the Algorithmic Trading club, with gameplay logic simulated in **Python and Docker containers** running participants' code.
- Implemented a **front-end for poker animations**, enhancing the user experience.

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

- Conducted self-research on hybrid recommender systems for scholarly papers, **implementing TF-IDF and Word2Vec models** to extract features from abstracts and calculate cosine similarity for content-based filtering and deep learning recommendations.

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

- Generated philosophical content through training and fine-tuning a **transformer model** using **Python, PyTorch**, and a dataset of over **50,000 pages** from Immanuel Kant's works, achieving an impressive average perplexity score of **1084** validated by GPTZero.

## COMMUNITY & LEADERSHIP

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**SWECC Officer - External Head** Software Engineering Career Club August 2023 - Present

- Spearheaded initiatives like LinkedIn workshops and resume reviews, organizing club events, fostering leadership, organization, and communication skills.

**Teacher Assistant — Front End development** University of Washington iSchool June 2023 - September 2023

- Enhanced learning outcomes for over **50 students** by teaching front-end development using **HTML, CSS, JavaScript, and React** to build interactive web applications, while providing valuable assistance through weekly lab sessions and office hours.

**Python Lead** Stanford 106A Jan 2023 - March 2023

- Facilitated effective learning for **10 students** in **Stanford's** introductory **CS 106A Python course**, creating engaging lesson content and slides, leading weekly sections, and fostering a supportive learning environment through campfire office hours.