



Abhinav Khanduja

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Education

University of Illinois Urbana-Champaign – BS in Computer Science Expected May 2026

Relevant Coursework: Operating Systems, Database Systems, Data Structures, Algorithms, Computer Vision, Cloud Networking, Computer Architecture, Distributed Systems, Programming Languages & Compilers

Skills

Languages: C, C++, Python, Java, Go, JavaScript, SQL

Technologies: AWS, GCP, Azure, Spring Boot, Flask, React, Next.JS, PyTorch, Selenium, GoogleTest, Docker

Experience

University of Illinois Urbana-Champaign **Champaign, IL**

Distributed Systems Researcher | C++, Go, Apache Kafka, RocksDB, CXL Server May 2025 – Present

- Researching different approaches to 'diskless' Kafka, allowing Kafka to write directly to object storage such as S3, which will cut cloud service bills by up to 80%, and shortening startup to seconds.
- Assisting graduate students in research regarding distributed file systems targeting Compute Express Link (CXL) shared memory, and vector databases.

Fanatics

New York, NY

Software Engineering Intern | Python, PyTest, AWS, Apache Spark, Snowflake June 2025 – Present

- Engineered a modular, scalable testing framework using AWS Step Functions, Airflow, and Glue Jobs to automate unit and integration testing across 30+ data pipelines, reducing bugs found in QC by 40%.
- Developing a data obfuscation pipeline to create statistically identical, anonymized datasets from over 200,000 production sales records. This allows developers to safely build and test with realistic, high-volume data.
- Enhancing real-time observability for critical data pipelines by integrating Slack webhooks. This system will provide proactive failure notifications and key performance summaries, reducing incident response time.

Tailwyndz LLC.

Remote

Software Engineering Intern | Python, PyTorch, FastAPI, Microsoft Azure, PostgreSQL May 2024 – Aug 2024

- Analyzed four years of historical sales data from eight brewery locations to develop a PyTorch predictive model forecasting sales and quality metrics for potential new sites.
- Engineered a dynamic framework using FastAPI enabling real-time user input and parameter adjustments to interact with data queries from Postgres, allowing for added flexibility for clients.

CyberGIS Center at UIUC

Champaign, IL

Undergraduate Research Assistant | Python, GeoPandas, Selenium, Singularity, HPC Mar 2023 – Aug 2023

- Developed and optimized a Python script for geospatial simulations of dam flooding, analyzing gigabytes of web-scraped data for 500 high-risk dams in all 50 U.S. states.
- Utilized Singularity containers to execute shell scripts on high-performance computing clusters at the National Center for Supercomputing Applications, automating GeoJSON generation using Python.

University of Illinois Administrative IT Services

Champaign, IL

Technical Services Representative | HTML, CSS, Linux Mar 2023 – May 2025

- Provided IT support and technical assistance for all 3 campuses in the University of Illinois System.
- Updated UI/UX for over 100 user-facing websites to adhere to updated state accessibility standards.

Projects

Page Fault Profiler

C, Linux API, Kernel Programming

- Developed a C-based Linux kernel module for targeted process performance profiling, periodically collecting and aggregating critical metrics including CPU usage and page fault (minor/major) statistics.
- Implemented kernel-user space communication, via '/proc' interface, for dynamic process registration or unregistration, and a character device enabling access to profiling data via a PFN-based mmap implementation.