

Khushi Sidana

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Education

University of Illinois Urbana-Champaign

Champaign, IL

Master of Computer Science **GPA: 4.0/4.0**

Expected Dec 2024

- Coursework: Database Systems (SQL), Cloud Computing, Artificial Intelligence (Python), Machine Learning

Narsee Monjee Institute of Management Studies

Mumbai, India

Bachelor of Technology in Computer Science and Business Systems **GPA: 3.94/4.0**

Aug 2019 – Aug 2023

- Coursework: Data Structures, Algorithms (C++), Object-oriented Programming, Full Stack Development (ReactJS)

Technical Skills

Languages: Python, C++, C, Javascript, MySQL, R, PHP, Dart, Typescript, HTML, CSS, MATLAB

Tools and Frameworks: React JS, Angular JS, Next JS, Tailwind, Redux, React Native, Node JS, Express JS, MongoDB, Vue, PostgreSQL, Git, AWS, Azure, PyTorch, Docker, Kubernetes, Linux, CI/CD, Jenkins, SAS

Concepts: Data Science, Algorithms, Object-oriented Programming, DevOps, Operating Systems, Cloud Computing

Developer Tools: Android Studio, R Studio, Jupyter Notebook, VS Code, Excel, Microsoft Word, Microsoft Powerpoint

Experience

University of Illinois Urbana-Champaign

Aug 2024 – Current

Graduate Research Assistant — Skills: Training LLMs, Model development, Image preprocessing Champaign, IL

- Developing a **foundational model** in IR imaging at Beckman Lab, under Dr. Rohit Bhargava, to learn **general-purpose representations** from unlabeled cancer data, optimizing for downstream tasks such as segmentation.
- Exploring suitable learning strategies, including **contrastive learning**, while analyzing the differences between IR imaging and H&E data to effectively train models for computational pathology applications.

Adobe Systems

May 2024 – Aug 2024

Software Engineering Intern — Skills: TypeScript, FastAPI, Python, SQL, Docker, Kubernetes Lehi, Utah

- Engineered an **AI-driven expert system** in Adobe Workfront, leveraging FastAPI and TypeScript, with deployment via Kubernetes and Docker, automating **90%** of risk identification and reducing project risks by **40%**.
- Integrated LLMs for **intelligent task reassignment**, ensuring optimal resource allocation, and utilized Snowflake with **advanced SQL** for real-time data processing, enabling dynamic dashboards and **REST API** implementations.
- Executed **CI/CD pipelines**, enhancing cross-functional collaboration, optimizing model performance, and ensuring seamless deployment in a production environment.

Smartech Electronic Systems

May 2022 – Oct 2022

Software Engineering Intern — Skills - React Native, Node JS, Express JS, MongoDB, Testing Mumbai, India

- Directed the development and implementation of a mobile employee attendance application using **MERN stack**, integrating **REST APIs** for location tracking, improving accuracy by **10%** and enhancing employee accountability.
- Implemented a **face identification system using SVM** into the online employee attendance application, adding an extra layer of security and reducing the risk of fraudulent clock-ins by **15%**.
- Collaborated with **cross-functional teams** to ensure seamless integration and optimized performance through code refactoring and database optimization, resulting in a **20%** reduction in server response time.

Projects

ConverSAT: Efficient Satellite Imagery Querying | CNN, Logistic Regression, PyTorch, ResNet-34, YOLOv8,

- Engineered an **automated system for GIS analytics** integrating Machine Learning, Database Systems, and Video Analytics to enhance satellite imagery querying and preformed database optimization for enhanced data processing.
- Executed a three-component framework encompassing **indexing, filtering localization, and detection**.
- Achieved a **3x speedup** in detection times and a **20% improvement** retention over traditional GIS methods.

Application for Real-time Yoga Pose Detection and Assessment | Deep Learning, Software Development(React)

- Led the development and implementation of a real-time yoga pose detection and assessment model using **MediaPipe**, **CNN+LSTM hybrid architecture**, and angle calculation techniques.
- Attained an impressive **99% accuracy** in pose estimation by incorporating denoising through **wavelet transform**.
- Spearheaded the creation of the yoga application using **React** for front-end and **Python/Django** for back-end.

BeatMetrics: Advanced Music Streaming Platform | SQL, Node, React.js, Tailwind, Flask, GraphQL, TypeScript

- Architected a music streaming web application with **CRUD** functionality achieving a **30%** boost in user engagement.
- Revolutionized the music discovery experience by introducing a Tinder-like feature, leading to a **20%** increase in user satisfaction and a surge in daily active users by 1,000 and used Google Cloud Platform (**GCP**) for robust hosting.
- Refined **SQL querying techniques** to optimize database performance, reducing query response times by **2x**.

Publications

Prediction of Diabetes using Machine Learning Techniques

- Authored and presented a research paper on application of **machine learning** for diabetes prediction, emphasizing the mitigation of overfitting and incrementing overall accuracy which resulted in **97% accuracy**.
- Successfully published in the IEEE Xplore Digital Library, DOI: [10.1109/IEMECON56962.2023.1009233](https://doi.org/10.1109/IEMECON56962.2023.1009233)