# SAKSH MENON

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## EDUCATION

**Bachelor of Science, Computer Science** Expected Graduation: May 2026
*University of Cincinnati, Cincinnati, OH – 3.8 GPA*
**Honors:** National Society of Leadership and Success Honor Society, CEAS International Scholarship, and UC Global Scholarship
**Relevant Coursework:** Data Structures & Algorithms, Deep Learning, Applied AI & ML, Statistics & Probability, Linear Algebra

## SKILLS

**Software Languages:** Python, Typescript, Java, JavaScript, C, C++, HTML, CSS, R, MATLAB, Go
**Frameworks:** React, NextJS, Node.js, Tailwind CSS, Flask, Django,
**Developer Tools:** AWS, Azure, K8, CI/CD, Docker, Git, GitHub, MySQL, DynamoDB, MongoDB
**Frameworks/Tools:** TensorFlow, PyTorch, npm, REST APIs

## PROFESSIONAL EXPERIENCE

**Machine Learning Intern | Bioinformatics** August 2024 – December 2024
*Cincinnati Children's Hospital* *Cincinnati, OH*

- Designed a Python desktop tool with **K8** cloud computing for biologists to study genetic similarities between 2+ organisms
- Leveraged **2000-4000+** embeddings and vector similarities in PyTorch to evaluate top matches, backed with a custom confidence metric
- Reduced similarity search times by **40%** compared to industry standards; put together with a user-friendly interface
- Explored **Protein Language Models, SVC, XGBoost, Ridge**, and **Lasso** based models to predict fatal and non-fatal amino acid mutations across chains of **2000+** amino acids

**Software Engineering Intern | FaultHunter Research** January 2024 – April 2024
*CEAS, University of Cincinnati* *Cincinnati, OH*

- Pioneered pattern recognition techniques to detect **7+** C and Assembly code vulnerabilities in embedded systems
- Enhanced Python pipeline, improving bug detection by **15%** using TensorFlow architectures by addressing skewed data with label ratios of 50:1 and replicating methodologies outlined in 6 academic research papers
- Incorporated criticism from **20+**/month code reviews, and mentorship to modify code and experiment with new approaches, encouraging a culture of continuous improvement and innovation

**Teaching Assistant | Data Structures and Algorithms** August 2023 – December 2023
*CEAS, University of Cincinnati* *Cincinnati, OH*

- Assisted **50+** students with data structures and fundamental C++ concepts with code reviews and troubleshooting
- Reviewed **12,500+** lines of code and provided valuable feedback leading peers towards effective solutions
- Played a crucial role in bridging communication gaps between professors and a diverse student body allowing for smooth operations, creating a more inclusive learning environment

**Software Engineering Intern | Psychiatry** January 2023 – April 2023
*Cincinnati Children's Hospital* *Cincinnati, OH*

- Extracted insights from **500,000+** readings of eye tracking data from **500+** fragile X syndrome patients with an optimized data analysis pipeline, contributing to the success of multiple research projects for a **billion-dollar** firm
- Enhanced productivity by reducing computation times by over **50%** with parallel computing in **Python** and **MATLAB**, with a **SQL** dataset, powered by **Kubernetes** cloud computing
- Participated in the development of **3** different projects; engaged in brainstorming sessions to arrive at well-informed decisions

## PROJECTS

**Yank – Search Query Optimizer** May 2025 – July 2025
*AWS, LLMs, Python, JavaScript, Docker, Flask, HTML, CSS*

- Architected an end-to-end browser extension that bridges vague search queries and search results while keeping users in control
- Deployed auto-scaling backend services using **AWS EC2** with **AWS Cognito** authentication allowing for low latency
- Transformed queries with additional context based on NLP semantics, effectively reducing misinterpretations

**MarketMatch – Commercial Matchmaking** April 2025 – June 2025
*Go/Golang, React, Typescript, NoSQL, HTML, CSS*

- Developed a scalable marketplace platform to match buyers and sellers with a customized **Gale-Shapely** algorithm
- Engineered a user interface with React and TypeScript, along with MySQL, allowing for real time messaging, matchmaking, storing user info, and storing listing info with modern data security techniques against XSS and CSRF vulnerabilities

**Hackathon Projects** November 2024
*HTML, JavaScript, Python, PyTorch, YOLO, CV, Jupyter, HTML, CSS*

- Conceptualized and designed Clarity – a YOLOv8 system, trained on Freiburg Groceries Dataset, designed to assist visually impaired users in their daily activities, such as grocery stores, optimized with a centering algorithm

**Deep Learning Applications** November 2023 – December 2023
*PyTorch, TensorFlow*

- Implemented CNN and ResNet50 systems to detect COVID-19 infections in lung X-ray images with an **85%** accuracy rate measured by **F1 scores**, **Confusion Matrices**, and **ROC** curves
- Detected retinal blood vessels with U-net driven image segmentation; achieved an accuracy of **81%**
- Utilized GRUs to build translators between English, Hindi, and French