MADHUMITHA SESHAIAH

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EDUCATION

University of Illinois at Chicago - Master of Science, Computer Science   **Aug 2025 - May 2027**
Courses: Computer Algorithms & Data Structures, Database Management Systems, Applied AI & Machine Learning

Anna University - Bachelors in Computer Science & Data Science (Hons)   **June 2021 - April 2025**
Courses: Object Oriented Programming, Computer Architecture, Operating System, Cryptography and Network Security

TECHNICAL SKILLS

Programming Languages: Java, Python, C, C++, Swift, Go, Rust, Kotlin, SQL, Scala, Linux, Shell
Web Technologies: HTML, CSS, JavaScript, ReactJS, AngularJS, Vue, NodeJS, C#, Spring, PHP, Django, Flask, Figma
Tools and Technologies: AWS (EC2, Lambda, SES), Azure, GCP, Hadoop, Kafka, Docker, MongoDB, Git, AI tools
AI/ML & Python Tools: GenAI, CNN, RNN, LLM, TensorFlow, Keras, Scikit-learn, PyTorch, Numpy, Open-CV, NLTK

WORK EXPERIENCES

Graduate Assistant   **UIC Technology Solutions**   **Sep 2025 - Present**

- Developing **workforce management systems** for over **27,000+** UIC users using **JavaScript**, **Node.js and Express**.
- Implementing **unit tests** using **Jest & Supertest** cases to achieve full test coverage across **REST API** endpoints.
- Managing **version control** and **CI/CD** workflow using **GitHub actions** for automated deployment and testing.
- Optimizing **MySQL** queries by **5x** and **ETL** pipelines for data synchronization and automated **Azure** email notifications.

Software Developer Intern   **Idexcel Pvt Ltd**   **May 2024 - Aug 2024**

- Designed a **real-time distributed** notification system that learns user behavior patterns and adapts to context variation
- Scaled real-time log analysis pipelines using **Docker containers** deployed on **EC2 Kubernetes clusters**.
- Built a **Kafka-Spark** telemetry pipeline for **parallel log analysis** on 10M+ records and storing results in **Hadoop HDFS**
- Developed **AWS Lambda** functions for anomaly detection, enabling sub-second to reduce **query latency by ~70%**
- Notified via personalized alerts using **Amazon SES and APNs** and boosted engagement by **35%**

Software Engineering Intern   **Vision Isoftech Pvt Ltd**   **May 2023 - Aug 2023**

- Developed an **Android** recommendation app with **Kotlin** and **Retrofit**, refined API calls to deliver 150+ suggestions/min
- Built an image similarity algorithm using **TensorFlow** and **GPU**-accelerated embeddings for product matching
- Integrated **TF Lite Android library** for on-device inference and designed a scalable **UI** with **Jetpack Compose**, boosting product discovery and repeat purchases by **93%.**

TECHNICAL PROJECTS

Doc-to-Audio iOS App [Swift, Xcode, LangChain, UIKit, iCloud/Box API]   **Dec 2024 - Feb 2025**

- Developed an **iOS** app in **Swift** that converts documents into audio using OpenAI's **LLM API** through **LangChain**
- Leveraged **AVFoundation and BGProcessingTask** to deliver **96%** uptime for offline audio playback and background
- Enhanced **UX** with haptic feedback, dark mode, and VoiceOver, boosting **accessibility** engagement by **70%.**

E2E E-commerce Website [React, TypeScript, RestAPI, MongoDB, OAuth2]   **Aug 2024 - Oct 2024**

- Built an e-commerce site with **React, TypeScript, and MongoDB**, boosting efficiency by **78%** for high-volume SMBs.
- Enhanced backend efficiency with **NodeJS, REST APIs,** and optimized **NoSQL** queries using **aggregation** pipelines.
- Integrated a secure payment gateway via **API**-authenticated **REST** endpoints and **OAuth2** for user authentication

Edge-Assisted Suspicious Activity Detection [Java, CNN, AWS, FastAPI, OpenCV]   **Feb 2023 - April 2023**

- Developed a surveillance web app with a **Deep Learning 3D CNN** pipeline, integrated with **FastAPI** for real-time suspicious activity detection, achieving a **97.2% ROC-AUC score** and **28 FPS** inference speed.
- Processed video frames using **OpenCV** and optimized multi-camera person tracking with **DeepSORT** in **PyTorch**
- Built a monitoring dashboard with **VueJS** and deployed the application using **Django REST framework**.

AWARDS, CERTIFICATIONS, AND PUBLICATIONS

- Published **research papers** in EXIF Multimedia Metadata [Link], COVID-19 detection by CT-Scan Images [Link]
- Oracle Certified Associate 2023, Gold League at Google Cloud, Winner of Internal Smart Indian Hackathon 2024