

# Akhash Senthil Kumar

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## Education

### Master of Computer Science

Arizona State University | May 2025

Coursework: Multimedia & Web Databases, Software Security, Knowledge Representation & Reasoning, Statistical Machine Learning, Information Assurance & Security.

### B.E Computer Science & Engineering

Anna University | April 2023

Coursework: Data Structures & Algorithms, Human Computer Interaction, Computer Networks, Deep learning, Cloud Computing.

## Technical Skills

**Programming Languages** : Java, Python, C++, Javascript, BASH, PHP, SQL

**Tools, Frameworks & Operating Systems** : Git, Figma, NodeJS, React, Flask, Flutter, Linux

**Technologies & Databases** : Docker, AWS, MongoDB, MySQL, Firebase, Oracle

## Experience

### Software Developer Intern : AnDnR Soft Solutions Private Limited, Chennai

December 2021 - June 2022

- Developed cross-platform mobile app using Flutter for **real-time boat monitoring**, ensuring seamless functionality
- Designed **GPS tracking** and **Geo-fencing system**, reducing theft likelihood by 66%.
- Optimized API configurations and fixed bugs in MQTT module, reducing sensor data retrieval time by 37%.
- Deployed web app using PHP to showcase the company products and admin dashboard to monitor the clients.
- Performed real-time **data analysis dashboards** and visualizations using Python, improving decision-making and data accessibility for stakeholders by 35%.
- Utilized IoT technology to capture and transmit data from boats to a centralized cloud server, resulting in a 30% reduction in manual inspection time.

### Machine Learning Engineer Intern : Verzeo Edutech Private Limited, Chennai

June 2020 - August 2020

- Created image detection system using **relevance feedback** and ResNet architecture, achieving 89% precision.
- Implemented image search algorithm using **Locality Sensitive Hashing** and **Personalized PageRank**, resulting in a 25% performance improvement over the previous version.
- Enhanced scalability of the application using AWS, optimizing code and reducing processing time by 30%.
- Executed **Sentiment Analysis** on twitter dataset to identify messages based on positivity/negativity in order to provide appropriate feed recommendations to users.

## Projects

### Sign Language Interpreter using LSTM, [Personal Project](#)

December 2022 - March 2023

- Built a system to convert sign language to text/speech using **LSTM**, enhancing communication by 30%.
- Developed mobile app, SignEase, using LSTM to enable **real-time communication** with hearing impaired people.
- Devised the **RNN** model using ASL, achieving a 44% improvement in communication with disabled individuals.
- Recorded the datasets for three different sign languages for model training purposes, resulted in 13% accuracy increase.
- Added multi-language support using **Google Cloud Translation API**, resulting in 50% more users.

### Graphical Password Authentication, Smart India Hackathon 2022 runner-up

August 2022 - December 2022

- Deployed **RESTful Web Service** using Flutter/React.js, Django and MongoDB, enhancing website security by 25%.
- Pioneered **a novel Polygonal Puzzle system** with 10,240 unique combinations.
- Implemented login attempt limits and exponential backoff, reducing brute force attacks by 70%.
- Strengthened security by **MFA requiring puzzle completion**, mitigating shoulder surfing and keyloggers by 50%.
- Improved usability and security strength, increasing user satisfaction by 40% and confidence in authentication by 85% based on surveys

### RFID-Enabled Automated Billing System, [Research paper](#)

April 2022 - June 2022

- Achieved automated billing system using **IoT** (NodeMCU, EM18 Reader, I2C) and RFID, reducing billing time by 40%.
- Revolutionized the checkout process by seamlessly integrating RFID tags into items, enabling **automatic scanning** as soon as they are placed in the cart.
- Introduced **anti-shoplifting system** by using weight sensors in aisles and cart for item presence detection.
- Constructed mobile app using Flutter for viewing items and payment, resulting in a 30% increase in transactions.
- Redesigned the retail landscape by reducing the need for human resources in the billing section, resulting in a 40% decrease in labor costs and a 50% increase in operational efficiency.