

# Swetha Saseendran

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## EDUCATION

### University of Massachusetts, Amherst

MS Computer Science

Jan 2025 – Dec 2026

Current GPA: 3.9/4.0

Current Courses: COMPSCI 589 Machine Learning, COMPSCI 683 Artificial Intelligence, COMPSCI 520 Software Engineering

### SSN College of Engineering

B.E Computer Science Engineering

Aug 2018 – May 2022

CGPA: 8.974/10

Coursework: DSA, OOPS, Computer Organization and Architecture, Design and Analysis of Algorithms, DBMS, Software Engineering, Operating Systems, Theory of Computation, AI, ML, Computer Networks

## WORK EXPERIENCE

### Software Engineering Intern, Center for Data Science Department, UMass Amherst

Mar 2025 – Present

- Designed and developed a full-stack Android solution for Bluetooth-based sensor data acquisition from Shimmer sensor devices for stroke rehabilitation, including a Doze-resistant foreground scanning service, a custom SPP file transfer protocol with chunked acknowledgment and binary recovery, dual-mode file persistence (local and AWS S3 cloud sync), real-time Crashlytics monitoring, a decoupled broadcast-driven UI, and groundwork for backend analytics via SQLite integration. Created the API for cloud sync using FastAPI deployed using AWS Lambda, and API Gateway.
- Deployed an R-based API on AWS EC2 instance using Docker, enabling seamless deployment through a CI/CD pipeline. Developed code for data analytics and computation of avian flu predictions based on bird abundance data, leveraging MDP to model and forecast flu outbreaks effectively. Implemented data mapping for images stored in AWS S3, enabling efficient retrieval and processing for analytics workflows.

### Technology Analyst, Citi, Chennai

Aug 2022 – Dec 2024

- Achieved a 60% reduction in API response time by creating an API connector service with Asynchronous Data Streams and reduced the development cycle by an entire sprint through designing a Proxy Bridge Service for whitelisted APIs.
- Enhanced configuration management by developing a tool with the DFS algorithm to compare multiple YML config files, integrated into the DevOps Pipeline, enhancing configuration management.
- Played a key role in migrating an application including designing interactive prototypes for web pages and components using Figma and developing them, reducing user churn by 22% and mitigating rage clicks by 18%.
- Designed and developed a Process Improvement Project that creates real-time mock APIs from spec files, significantly reducing development time by addressing API dependencies. Praised as the best implementation among various projects nationally.
- Improved user engagement by creating an API to monitor services, onboarding two critical API services, and achieving a 90% code quality rating. Developed and maintained statistical APIs for financial market along with data analysis using Tableau for algorithmic trading, and risk modeling, supporting business-critical operations.

### Data Science Intern, First Insight, Chennai

Jul 2021 – Dec 2021

- Developed an Aspect-Based Sentiment Analysis System using LDA and BERT Transformers, improving Topic Coherence by 20%. Customized for user-defined aspects and deployed as a REST API, integrating it into a machine-learning pipeline for seamless access and efficiency.

### Computer Vision Research Intern, SRIC-IIT Madras, Chennai

May 2021 – Nov 2021

- Developed a motion analysis system for athlete biomechanics using OpenCV, MediaPipe, and YOLO, deployed via Flask API, with a custom basketball dataset achieving 82% accuracy and engineered a Computer Vision pipeline to monitor KPIs like shooting hand detection, knee angle analysis, and shot count for performance insights from video feed.
- Led and mentored a team of 5+ research assistants through teaching sessions and academic guidance.

### Full Stack Developer Intern, GUVI Geek Network Private Ltd, Chennai

Feb 2021 – Mar 2021

- Collaborated with a team of developers to implement an online learning and teaching marketplace using HTML, CSS, jQuery-AJAX, Bootstrap, PHP, and MySQL, enhancing user engagement and platform functionality.

## PROJECTS AND PUBLICATIONS

### Analysis of Player Tracking Data Extracted from Football Match Feed, RRIA Journal

DOI:10.33436/v33i2y202307 ↗

Developed a cost-effective system using K-Means, YOLOv5, DeepSORT, and perspective transformation using GAN pix2pix model to extract tracking data directly from football match feeds. Implemented a mathematical model integrating pitch control and expected threat metrics to assess player decision-making abilities.

### Comparison of Lossy Image Compression Technique, IJHI Journal, Vol. 2, No. 2

DOI:10.1504/IJHI.2023.129342 ↗

Evaluated models like JPEG, Autoencoders, and GANs. Determined JPEG as the top performer for image compression through extensive testing. Achieved average PSNR of 38 dB and SIM of 0.96.

### Classification of Hate Speech and Offensive Content Using DistilBERT, FIRE-WN 2021

CEUR Proceedings Link ↗

Achieved 77.67% accuracy in Task-A (Binary Classification) and 65.1% in Task-B (Multiclass). Developed Task B using multiple binary classifiers, achieving up to 60% accuracy, closely matching pretrained DistilBERT. Ranked 24<sup>th</sup> globally.

### Poker AI Agent, University of Massachusetts, Amherst

More Info ↗

Github Repo ↗

Developed and evaluated AI agents for Texas Hold'em Poker, including Expectiminimax with statistical opponent modeling, Q-learning with state abstraction, and a novel hybrid MCTS-Minimax agent with dynamic Bayesian opponent profiling.

## EXTRA-CURRICULARS AND ACHIEVEMENTS

### Committee Member, Junior Analyst Council, Citi

Mar 2023 – Dec 2024

Selected as one of 20 analysts nationwide to represent all analysts. Led initiatives to enhance peer learning, coordinated townhalls with senior leadership, and conducted tech sessions with SMEs.

### Alumni Relations Head, ACM SSN

Jun 2021 – Apr 2022

Cultivated strong alumni relationships by fostering communication and coordinating engaging events, creating competitive coding questions for contests.

### Awards and Recognitions:

- Received the A-Star Applause Award in my first year at Citi for operational excellence and creating long-term value by fixing root causes.
- Awarded the prestigious Citi GOLD and SILVER gratitude awards in consecutive months during my second year at Citi, recognizing my contributions as one of the best employees in my business unit globally.
- Winner of the ICG Debate League 2.0, Citi, debating the topic of "Ethical Implications of Gen AI hindering its adaptation in FinTech."
- Chennai branch winner in the ICG Global Analyst Hackathon 2023, Citi.

## SKILLS

### Certifications:

Full Stack Data Scientist (GSDC, 2021)  
Social Networks (NPTEL IIT Ropar, 2020)  
Data Science Foundations (Coursera, 2020)  
Introduction to Big Data (Coursera, 2020)  
Business Analytics Fundamentals (IIT Madras, 2018)

### Technical Skills:

**Languages:** Python, Java, C, Typescript  
**Data:** SQL, MongoDB, Elasticsearch, Kafka, Redis, Tableau  
**Web:** Angular, React, Next JS, Flask, Django, Android Java  
**Backend:** Node JS, Spring Boot, PHP, FastAPI  
**ML:** TensorFlow, PyTorch, OpenCV, MediaPipe, Hugging Face  
**Cloud and Deployment:** AWS, Docker, Git, Jenkins, CI/CD