# JAYASUDHA KALAMEGAM

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## EDUCATION

**City University of Seattle** (Jul 2023 - Mar 2025)
*Master of Science in Computer Science (Dean's List Honor)* **GPA: 4.00**
*Coursework:* Full-Stack Development, Data Structures and Algorithms for Computing, Artificial Intelligence for Data Science, Data Mining, Machine Learning and Deep Learning, Cloud Computing Overview

**Anna University, Chennai, India** (Jun 2012 - Apr 2016)
*Bachelor of Engineering in Computer Science* **CGPA: 7.9/10**

## TECHNICAL SKILLS

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|---|---|
| **Programming Languages** | JavaScript, TypeScript, Java, Python, Shell Scripting |
| **Databases** | MySQL, SQL, MongoDB |
| **Web Technologies** | HTML5, CSS3, jQuery, AJAX, React, React Native, Node.js, Flask |
| **Development and Testing Tools** | Git, Visual Studio, Postman, Docker, TeamCity, UDeploy, AutoSys |
| **Machine Learning and AI** | LLM, RAG, CNN, PyTorch, TensorFlow, Scikit-learn, Keras |
| **Cloud Services and Deployment** | AWS (EC2, SageMaker, S3, Lex, Lambda, VPC, Amazon Rekognition), Azure |

## WORK EXPERIENCE

**TATA Consultancy Services, Chennai, India – Associate Software Engineer** (Apr 2019 - Jun 2022)

- Collaborated with cross-functional teams to translate banking requirements into system-level solutions, enhancing data management processes and significantly improving the efficiency of large-scale distributed systems
- Developed a custom tool to visualize AutoSys job dependencies and optimize scheduling, reducing resource conflicts and execution delays, and improving overall job efficiency by 25% *(JavaScript, AutoSys, Shell Scripting)*

**TATA Consultancy Services, Chennai, India – Application Developer** (Feb 2017 - Mar 2019)

- Led the development of a distributed, real-time data processing system for a global banking client, improving operational efficiency by 40% and ensuring high availability and fault tolerance in financial systems
- Engineered secure, scalable transmission modules using NDM SFTP for handling large volumes of financial data, incorporating advanced exception handling and performance optimizations to meet banking industry standards

## PROJECTS

**Personal Smart Finance**

- Created an AI-powered financial chatbot using Retrieval-Augmented Generation (RAG), FAISS, and LLM, improving financial tip accuracy by 85% through embedding-based similarity search with all-MiniLM-L6-v2
- Designed and built a full-stack expense tracker using the MERN stack, enabling users to track and categorize expenses 30% faster, with real-time data visualization and intuitive interface powered by Vite and Tailwind CSS

**React Native Weather Application**

- Built a cross-platform React Native app using Expo, delivering real-time weather forecasts, sunrise/sunset times, humidity, and UV index with animated GIF backgrounds and interactive UI for enhanced user engagement

**Drowsy Driver Detection using Python**

- Constructed and trained a Convolutional Neural Network (CNN) to analyze 726 eye images, enhancing real-time detection of drowsiness indicators like eye closure while driving; applied data augmentation techniques to boost accuracy by 35%, especially for individuals wearing glasses, ensuring robust performance across conditions

**Multi-Factor Authentication System**

- Crafted a Flask backend with password hashing (Flask-Bcrypt) and 30-second TOTP generation (PyOTP) for MFA. Integrated Google Authenticator into a responsive frontend using CSS Bootstrap and implemented modular architecture with Flask blueprints, ensuring secure database management via SQLAlchemy

**Home Run Derby Projection Model**

- Developed a MERN stack application to predict MLB Home Run Derby outcomes using sabermetrics, achieving 90% accuracy, and it deployed on Azure with a user-friendly interface for player comparisons and results