

# SONA SELVARAJ

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## EDUCATION

### Master of Science in Computer Science

Clark University

August 2023 - May 2025

### Bachelor of Engineering in Computer Science

Anna University

August 2018 - June 2022

## SKILLS

**Languages:** Python, C, Java, SQL, HTML, CSS, JavaScript | **Frameworks/Technical expertise:** Angular, React, Web development, Data structures and Algorithms, UI/UX designs | **Packages:** Spark, NumPy, Pandas, Matplotlib, Scikit-learn, Tensorflow, PyTorch, Keras, Matlab, Seaborn | **Database:** MySQL, Microsoft SQL server MongoDB | **Cloud:** AWS (Certified AWS Cloud practitioner) | **Tools:** Tableau, Power Bi, Microsoft Excel, Git

## PROFESSIONAL EXPERIENCE

### Maitsys Inc | Boston

Software Development Engineer intern – AI/ML

January 2025 - March 2025

- Conducted advanced exploratory data analysis on large-scale datasets using Python (Pandas, NumPy, and Matplotlib), **improving data quality metrics such as completeness and consistency by 40%**.
- Worked on IBM Cloud Environment and Services for image recognition to detect faces in images using HAAR **cascade classifiers and frontal face classifiers achieving 84% accuracy**

### Clark University |

Research Assistant

October 2024 – Present

- Investigated the potential of Stable Diffusion, a powerful GAN pipeline, for text-to-image generation tasks.
- Engineered and fine-tuned deep learning models with Tensorflow and Pytorch, achieving a **15% increase in Predictive accuracy**.
- Explored techniques like data augmentation and fine-tuning to improve model performance, showcasing an understanding of optimization strategies for generative models

### Kaar Technologies | Chennai, India

Software Developer

December 2021 - April 2023

- Developed a model and forecasting tool using React Framework to automate predictive modeling tasks, streamlining the process of developing forecasting models using python flask resulting in a **20% improvement in sales performance** with a focus on customer-obsessed scientific innovation.
- Developed interactive Power BI dashboards featuring filters for granular analysis by product and region, coupled with key performance indicators (KPIs) to assess sales seasonality and evaluate the impact of marketing campaigns across a **customer base exceeding 1 million**.

## RESEARCH PROJECTS

### AI-Based Mock Interview Application

[Git](#)

- Developed an AI-driven mock interview platform using React, Flask/FastAPI, and PostgreSQL, supporting 100+ concurrent users for real-time interview simulations.
- Designed and implemented RESTful APIs using Flask/FastAPI for handling user sessions, interview question generation, and feedback retrieval.
- Integrated LLaMA 3 for personalized question generation and response evaluation, **increasing feedback accuracy and relevance by 35%**.
- Reduced API response time by 25%** by implementing asynchronous request handling with FastAPI and optimizing SQL queries with indexing and connection pooling.

### Event Management Application

[Git](#)

- Developed an event booking platform with React (frontend), Node.js (backend), and MongoDB, streamlining event planning and manager availability tracking.
- Built scalable RESTful APIs for event creation, user registration, booking management, and notification services.
- Enhanced real-time updates and booking flow, improving interaction efficiency and **reducing response time by 20%**.
- Integrated calendar sync and notifications, boosting user engagement and supporting thousands of concurrent records with **25% faster queries**.

### EDA Portal

- Built a full-stack interactive EDA portal using React (frontend), Flask (backend), and MongoDB, enabling real-time dataset uploads, insights, and visualizations.
- Optimized backend routing and database queries, reducing data processing time by 15% and **boosting query performance by 40%**.
- Secured the portal with JWT authentication and deployed it with a team of 3, **achieving a 30% improvement in UX** and zero downtime during testing.