

Saundarya Subramaniam

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SUMMARY

Passionate tech enthusiast, machine learning aspirant with a love for software and IoT!

EDUCATION

2023 - 2027 BTech in Computer Engineering at K.J.Somaiya College of Engineering [GPA: 9.4(till sem 3)]
2021 - 2023 High School at Pace Junior Science College
2010 - 2021 Middle School at Bombay Cambridge International School

EXPERIENCE

Somaiya Machine Learning Research Association Aug 2024 - Present
Research Associate

- Model Comparison for Crop Disease Prediction** [Ongoing]
Developed and analyzed multiple models using InceptionV3 with transfer learning to build an crop disease prediction and prevention system using Flutter for frontend and Flask for backend.
- Legal Document Analysis Using LLMs** [Ongoing]
Developing a system using **LLMs** to extract and highlight critical sections of legal documents.
- Transformers vs CNN** [Ongoing]
Compared the effect of replacing CNNs with Transformers in standard models like ResNet, VGG, Inception, and YOLO.

Software Development Center May 2024 - July 2024
Data Science Intern

Data scraping and pre-processing poems of Hindi poets. Enhanced data preprocessing with **text normalization**, **tokenization**, and **formatting for genAI. LSTMs** to train dataset to generate new poems in a similar style.

Orion Racing India Sept 2023 - May 2024
Battery Management System (BMS) and Electronic Control Unit (ECU)

Monitored battery cell temperature, voltage, and current for optimal stack performance. Helped develop code for vehicle signals, Accelerator Pedal Position (APP), focusing on motor torque and indicator control.

SKILLS

- **Programming Languages:** Python, C, C++, Java, R
- **Machine Learning Frameworks:** TensorFlow, PyTorch, CUDA, Keras, Scikit-learn, OpenCV, Pandas
- **Frontend Technologies:** HTML, CSS, JavaScript, PHP
- **Backend Technologies:**SQL, MongoDB
- **Mobile App Development :** Android Studio, Xcode, Swift
- **Other Technologies:** Tableau, AutoCAD, Audacity
- **Core Skills:**Data Pre-processing, Model building, and Evaluation.
- **Soft Skills:**Team Management, Time Management, Leadership Skills
- **Languages Known:** English, Hindi, Tamil, Marathi, French

PROJECTS

Crop Disease Prediction and Management System-FASAL FORECAST

- Designed and deployed an AI-based mobile solution for real-time crop disease prediction, detection and management, with a team. Used **InceptionV3** for image classification, **decision trees** for treatment recommendations.

ML 101 College Workshop

- Organized and taught a workshop on **machine learning fundamentals** with hands-on coding exercises, covering concepts like dimensionality reduction, decision trees, and random forests.

Pokémon Battle Game

- Turn-based Pokémon battle game using Python and Pygame.
- Used object-oriented principles for game mechanics.

Learning, Roadmap Engine - SmartShala

- Developed an **AI-powered platform** that tailors study roadmaps based on student progress, providing **real-time feedback** and **adaptive recommendations**.
- **Fine-tuned GPT-2** for short note generation and quiz creation on a custom dataset.
- Implemented **Reinforcement Learning** for content generation, rewarding outputs based on student engagement— eg: adapting to generate more quiz-like content if students spend more time on quizzes.

Data Analysis and Visualization for COVID-19 in India

- Conducted data analysis and visualization on COVID-19 datasets using Python and Tableau.
- Analyzed total cases (active and discharged), deaths with respect to states and population in India.
- Made predictions about the healthcare system based on data trends.

RESEARCH PAPERS

Model Comparison for Crop Disease Prediction (Ongoing)

- Analyzing the performance of InceptionV3, ResNet50, and VGG for crop disease prediction.

Legal Document Analysis Using LLMs (Ongoing)

- Developing a system using LLMs to extract and highlight critical sections of legal documents.

CERTIFICATION

Reinforcement Learning - NPTEL

July 2024 - Oct 2024

Bandit algorithms, MDPs, Dynamic Programming, TD learning, Function Approximation, Policy Gradients, Deep Q Networks, Hierarchical RL, and POMDPs for uncertainty management.

Introduction to Multi-Agent AI Systems - IUCEE

Dec 2024 - Jan 2025

Gained practical experience in designing and deploying multi-agent systems and agentic AI, utilizing tools like Relevance AI, AgentGPT, and Galileo AI.

ACHIEVEMENTS

Violin - Awarded the National Scholarship from the Ministry of Culture.

- Won first prize for 5 consecutive years in Mumbai Zone.
- Passed 4 classical music examinations.
- Member of Octavium (The official college band of KJSCE).

Singing - Passed 2 classical music examinations.

Volunteer Work - Visited and played music as therapy for old age homes and AnamPrem (supporting blind and deaf-mute children).

Spotify Campus Ambassador - Promoting Spotify's student engagement programs to expand campus outreach.

HackerRank [saundarya.s1](#) - 4 star in Python and C **LeetCode** [saun09](#)

Competitive Programming - Solved 100 problem-solving questions on platforms like HackerRank and LeetCode.