SURYA A

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Profile Summary

ECE graduate with a solid foundation in Python, Machine Learning, and Embedded Systems. Specialized in deploying Computer Vision and Deep Learning models on edge devices like Raspberry Pi. Proficient in PyTorch, YOLOv8/v12, OpenCV, and Segment Anything Model (SAM). Actively exploring Data Science, AI model deployment, and real-time optimization. Strong interest in Biomedical AI, Autonomous Vehicles, and Brain-Computer Interfaces (BCI).

Education

B.E. – Electronics and Communication Engineering
University College of Engineering, Kancheepuram (2021 – 2025) | CGPA: 7.9 / 10

Projects

Brain Tumor Analysis and Diagnosis System | *Python, YOLOv12, SAM, ResNet18, Deep Learning — Apr 2025*

- Built an end-to-end AI system for brain tumor classification, detection, and segmentation.
- Used **ResNet-18** for classifying MRI scans into Glioma, Pituitary, Meningioma, and No Tumor.
- Integrated **YOLOv12** for tumor detection and bounding box localization.
- Applied **SAM** (Segment Anything Model) for pixel-level segmentation.
- Optimized model deployment for low-resource environments using Raspberry Pi.

Automatic Number Plate Recognition System (ANPR) | *Python, OpenCV, YOLOv8, Raspberry Pi — June 2024*

- Developed a real-time ANPR system for intelligent traffic surveillance.
- Performed image preprocessing to handle lighting variation and occlusion.
- Achieved 93.75% accuracy in license plate recognition.
- Deployed edge-AI system using YOLOv8 and Raspberry Pi.

Employee Attrition Analysis (*IBM Analytics Dataset) | Python, Pandas, Seaborn, Scikit-learn — July 2025*

- Built a logistic regression model to predict employee churn based on HR attributes.
- Performed exploratory data analysis to identify key factors like age, salary, and promotion.
- Achieved 80%+ model accuracy; visualized insights using heatmaps and confusion matrix.
- Tools used: Pandas, Seaborn, Matplotlib, Scikit-learn.

Technical Skills

- **Programming Languages:** Python, MySQL
- **Frameworks/Libraries:** OpenCV, YOLOv8/v12, SAM, PyTorch, Matplotlib
- **Platforms:** Raspberry Pi, Linux (Ubuntu)
- **Concepts:** Computer Vision, AI, Deep Learning, Object Detection, Image Segmentation, Embedded AI
- **Tools:** MS Office, Jupyter, Git
- **Additional Skills:** Strong analytical and problem-solving skills, Quick learner, self-motivated, and team player,Effective communicator with interest in storytelling & writer

Certifications

- **GenAI Powered Data Analytics** – *Tata Group (Forage)* – *June 2025*
- **Data Analytics Virtual Experience** – *Deloitte (Forage)* – *June 2025*
- **Data Science Intern** – *BCGx, Boston Consulting Group (Forage)* – *June 2025*

Experience

- Collaborated with faculty to train and test **YOLOv12 and SAM** on real-world MRI datasets.
- Fine-tuned YOLOv12 using **data augmentation** for improved medical image accuracy.
- Integrated segmentation and detection models to create a multi-stage diagnostic pipeline.
- Simulated edge deployment on **Raspberry Pi** for real-time diagnostic use cases.
- Applied **data science** methods like **EDA, feature engineering, model tuning** during internships with **Deloitte** and **BCGx**.
- **Database Management**: **MySQL** (queries, joins, indexing, partitioning, optimization) – MySQL
- **English Typing – Senior Grade** Typing speed: 50 WPM with certified accuracy.