SURYA A

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Profile Summary

ECE graduate skilled in Python, Machine Learning, and Embedded Systems, with hands-on experience in deploying Computer Vision and Deep Learning models on Raspberry Pi. Proficient in PyTorch, YOLO, OpenCV, and SAM, with interests in Data Science, Biomedical AI, Autonomous Vehicles, and BCI. Seeking roles as AI/ML Engineer, Computer Vision Engineer, or Embedded AI Engineer.

Education

B.E. – ECE | Specialized in **CSE**
UCE, Kancheepuram [2021 – 2025] | Anna university | CGPA: 7.9/10

Projects

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

- Researched and implemented optimal deep learning architectures for brain tumor analysis.
- Engineered an end-to-end AI pipeline integrating classification, detection, and segmentation.
- Developed MRI preprocessing and augmentation workflows to improve model generalization.
- Evaluated performance using Accuracy, IoU, and Dice Coefficient metrics.
- Optimized the system for deployment on low-resource devices like 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.

English-to-SQL Generator | Python, Google Gemini API, MySQL — *July 2025*

- Engineered an AI-powered English-to-SQL query generator using Python, MySQL, and Google Gemini API
- Automated dynamic schema parsing to deliver highly accurate, database-specific queries.
- Implemented secure database connectivity with robust exception handling for reliability.
- Advanced expertise in SQL automation, API integration, and AI-driven data retrieval.

Technical Skills

- **Programming Languages:** Python, MySQL, REST API, Basic html
- **Frameworks/Libraries:** PyTorch, Scikit-learn, OpenCV, NumPy, Pandas, Matplotlib, Seaborn, Selenium
- **Platforms:** Raspberry Pi, Linux, Git Hub, Hugging Face, Roboflow, tableau
- **Concepts:** Computer Vision, AI&ML, Deep Learning, Object Detection,Image Segmentation, RAG
- **Tools:** MS Office, Jupyter, Git, VS code, Colab Notebook
- **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) – May 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.