

# SURYA A

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## Profile Summary

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Highly motivated Electronics and Communication Engineering graduate with hands-on experience in Python programming, Machine Learning, Artificial Intelligence, and Embedded Systems. Specialized in deploying Computer Vision and Deep Learning models on edge devices such as Raspberry Pi. Proficient in developing AI solutions using PyTorch, YOLOv12, and the Segment Anything Model (SAM). Currently exploring advancements in Data Science, Brain-Computer Interfaces (BCI), Autonomous Vehicles, and Biomedical AI.

## Education

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### B.E. – Electronics and Communication Engineering

University College of Engineering, Kancheepuram (2021 – 2025) | CGPA: 7.9 / 10

### Higher Secondary Certificate (Bio-Maths)

KAKM Municipal Higher Secondary School, Vellore (2018 – 2021) | Score: 80.88%

## Projects

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### AI-Based Brain Tumor Detection from MRI – Python, YOLOv12, SAM, ResNet18, Deep Learning – Apr 2025

- Developed an AI pipeline for tumor classification, detection, and segmentation.
- Used ResNet-18 for tumor type classification (Glioma, Pituitary, Meningioma, No Tumor).
- Integrated YOLOv12 for object detection with bounding boxes.
- Applied SAM for pixel-perfect tumor segmentation.
- Built a deployable diagnostic prototype for real-time, low-resource environments

### Automatic Number Plate Recognition System – Python, OpenCV, YOLOv8, Raspberry Pi – June 2024

- Engineered a real-time ANPR system for smart surveillance.
- Performed image preprocessing for robust detection in varied lighting.
- Achieved 93.75% accuracy in number plate identification.
- Demonstrated seamless edge-AI deployment on Raspberry Pi.

## Technical Skills

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- **Programming Languages:** Python, SQL
- **Frameworks/Libraries:** OpenCV, YOLOv8/v12, Segment Anything Model (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 (Indian mythology – Tamil & English)

## Certifications

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### GenAI Powered Data Analytics – Tata Group (via Forage), June 2025

- Applied GenAI to automate exploratory data analysis and derive business insights.
- Simulated real-world business cases to enhance AI-driven decision-making.

### Data Analytics Virtual Experience – Deloitte (via Forage), June 2025

- Performed end-to-end analytics using data wrangling, visualization, and modeling.
- Delivered insights and dashboards aligned with client business objectives.

### Data Science Intern – BCGx, Boston Consulting Group (via Forage), June 2025

- Conducted customer churn prediction using EDA, feature engineering, and model evaluation.
- Presented actionable insights and stakeholder-ready recommendations through reports and visualizations.

## Experience

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- Collaborated with faculty and peers to design and validate the model on real MRI datasets.
- Enhanced detection accuracy by fine-tuning YOLOv12 with domain-specific augmentation techniques.
- Integrated SAM with YOLOv12 to enable both bounding box and pixel-level segmentation.
- Simulated deployment on Raspberry Pi to ensure compatibility in low-resource environments.