

Suren Elango

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EDUCATION

Vellore Institute of Technology

B.Tech in Computer Science

Aug 2023 – Aug 2027

Vellore, India | **CGPA:** 9.47

Bala Vidya Mandir

High School

Apr 2009 – Apr 2023

Chennai, India | **Percentage:** 92%

EXPERIENCE

Research Intern – Deep Learning

Indian Institute of Technology Delhi (IIT Delhi)

May 2025 – Present

Delhi, India

- Designed deep learning models using CNNs and RNNs to enhance video clarity in rainy conditions.
- Benchmarked OCR accuracy post-deraining using Qwen2.5, Tesseract, and EasyOCR under varying weather scenarios.
- Trained and optimized over 20 neural network variants using HPC clusters.
- Implemented multi-GPU training on NVIDIA DGX-1 systems with Tesla V100 GPUs.
- Worked on data pipeline optimization, profiling bottlenecks, and debugging model convergence and runtime stability.

Autonomous Systems Engineer

Team Ojas Racing, VIT University

Apr 2024 – Present

Vellore, India

- Designed and implemented ROS2-based autonomous driving pipeline using stereo vision and cone detection.
- Integrated perception with navigation, simulated in Gazebo and tested on NVIDIA Jetson hardware.
- Collaborated with interdisciplinary teams for real-world deployment and event demonstrations.

PROJECTS

Video Deraining using Deep Neural Networks | PyTorch, CNNs, Temporal Models

May 2025 – Present

- Developing deep learning models to remove rain distortions from videos by leveraging temporal frame correlations.
- Trained on synthetic and real-world datasets; explored CNN-RNN hybrid architectures for robust performance.
- **Technologies:** Python, PyTorch, TensorFlow, Docker, OpenCV, Jupyter

ROS2 TurtleBot3 Patrol with Nav2 and SLAM | ROS2, Python, Gazebo

Jun 2025 – Jul 2025

- Simulated TurtleBot3 patrol behavior using ROS2 Navigation Stack with SLAM and waypoint navigation.
- Created a custom house map and URDF-based robot; achieved patrol through dynamic goal publishing.
- Final project for Edouard Renard's ROS2 Navigation 2 Stack certification.

Gesture-Controlled Smart Home | Python, OpenCV, MediaPipe

Jan 2025 – Apr 2025

- Built a non-contact smart appliance control system using real-time pose tracking and gesture recognition.
- Implemented multiple gesture classes using MediaPipe landmarks to toggle lights and lock doors.
- Improved accessibility for users with limited mobility by enabling hands-free interactions.

SKILLS & TECH STACK

Languages: Python, Java, C, JavaScript, HTML5, CSS3

Frameworks/Libraries: ROS2, PyTorch, TensorFlow, OpenCV, Pandas, NumPy, MediaPipe

Tools: Docker, Git, Jupyter Notebook, Roboflow, HPC, Gazebo, VSCode

Technologies: NVIDIA Jetson, Linux, SLAM, Real-time Systems, Computer Vision, Deep Learning, Gen-AI, LLM

CERTIFICATIONS & HONORS

Oracle Cloud Infrastructure 2025 Generative AI Professional, Oracle Cloud Infrastructure 2025 Certified AI Foundations Associate, ROS 2 Nav2 [Navigation 2 Stack] with SLAM and Navigation – Edouard Renard, HackerRank Python/Java (Basic), MATLAB Onramp, F1 Aerodynamics, LIME Motorsport Workshop, Winner – Hack the Hackathon (IEEE CS)