Murali Krishna L

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Portfolio | LinkedIn | GitHub | Leetcode | Codeforces

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EDUCATION

Rajalakshmi Engineering College — Tamil Nadu, India
Bachelor of Engineering, Electronics and Communication; CGPA: 8.3 — **May 2025**
Don Bosco Matriculation Higher Secondary School — Tamil Nadu, India
SSLC and HSC, State Board; SSLC: 82.4% and HSC: 87.5% — **May 2021**

SKILLS SUMMARY

- **ML & CV Techniques:** Classification, Facial Landmarks, CNNs, Drowsiness & Emotion Detection, Signal Filtering
- **Tools & Frameworks:** OpenCV, NumPy, SciPy, MediaPipe, scikit-learn, PyQt5, Matplotlib, Tkinter, Python OOP
- **AI Integration:** Gemini API, Generative AI Prompting, Real-time Video Analytics, Embedded ML deployment
- **Math & Modeling:** Feature extraction, EAR, MAR, rPPG, 2nd-order Butterworth filter, Manual backprop in C++
- **Deployment & UI:** PyQt5, CLI dashboards, custom alerts, webcam feed overlays, state monitoring
- **Team Traits:** Detail-obsessed, creative problem solver, loves building from scratch, explains ML with visuals, quick learner.

WORK EXPERIENCE

RESEARCH INTERN | Indian Institute of Technology, Madras (IITM) — **March 25- Present**
- Working on an international research project involving web dev, data analysis, visualization, and sensor integration.
- Actively learning and applying necessary tools and skills as part of the research process.

PROJECT TRAINEE INTERN | CODEXE Technologies — **July 24- October 24**
- Took part in developing multiple websites using both code-based stacks and no-code tools like WordPress.
- Deployed websites with custom domains on Hostinger, set up CI/CD, and resolved deployment, error, and uptime issues.

PROJECTS

Offline Neural Net from Scratch | C++ (no ML libs) — **May 25 – Present**
- Built a Flutter app for student registration and admin login, with email/password auth, verification, and Firestore-based profiles.
- Set up a CI/CD pipeline using GitHub Actions to auto-build APKs and upload to Google Drive via Rclone and secrets.

AI DevOps Coach Chatbot | React.js, Node.js, Firebase, Gemini API, AWS, Docker — **May 25 – Present**
- Built a full-stack AI chatbot to analyze GitHub repos, tech stacks, and suggest CI/CD improvements using Gemini AI.
- Integrated Firebase Auth (Google/GitHub), Firestore DB, and Dockerizing frontend/backend hosting on EC2 with Compose.

Vehicle Driver State Estimation | Python, OpenCV, dlib, scipy, PyQt5 — **January 25- March 2025**
- Built a real-time system to detect drowsiness via EAR and track driver distraction using YAW-based head movement.
- Added heart rate detection via facial video using SciPy; adjusted for head turns with YAW-based correction.

CARLA: Autonomous Car Simulation | Python, Tensorflow, StableBaselines_3, CARLA — **March 24- May 2024**
- Developed a reinforcement learning model for autonomous driving using CARLA and StableBaselines3, trained to navigate and make steering decisions.
- Generated and tested an h5 model for real-time control, demonstrating practical applications of RL in autonomous vehicle simulations.

CERTIFICATES AND COURSES

Oracle AI Vector Search Professional Certification | Oracle — **May 2025**
- Learned implementing vector-based AI search solutions, combining semantic search with traditional indexing methods.
- Had experience with embedding models, similarity search techniques, and enhancing search relevance in enterprise apps.

GitHub Foundations Certification | GitHub — **April 2025**
- Proficient in Git and GitHub workflows, including branching, merging, pull requests, and conflict resolution.
- Got hands-on experience with version control, repository management, and collaborative development in projects.

SQL Essential Training | NASBA and Linkedin Learning — **January 2025**
- Explored SQL fundamentals, including writing efficient queries, utilizing joins, and designing relational databases.
- Experienced advanced SQL techniques like subqueries, indexing, and query optimization strategy through hands-on practice.

ADDITIONAL HIGHLIGHTS

- Led *Design-A-Thon '24* event in my college with a 4-member team — handled event planning, logistics, and coordination.
- Mentored juniors in career guidance and project planning, including guidance on hosting, uptime, and debugging errors.
- Built 10+ mini-projects — several with a focus on automation, reliability, and system-like responsiveness.
- Currently working in research and development of a product for an IT startup company.
- Built AI/CV + automation projects ranging from RL sims to fatigue-aware interfaces and AI chatbots.
- Now working on blending real-time AI sensing with gaming interfaces and research-based edge AI.