

# Balaji G

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[linkedin.com/in/balaji-gunasekaran902](https://www.linkedin.com/in/balaji-gunasekaran902) | [github.com/balaji-G06](https://github.com/balaji-G06)

## TECHNICAL SKILLS

**Core Technologies:** Embedded Systems Development, Internet of Things (IoT)  
**Programming Languages:** Python, C/C++, Embedded C, Java, HTML5, CSS3, SQL  
**Frameworks & Libraries:** Arduino IDE, ESP32, Firebase  
**Hardware & Protocols:** Raspberry Pi, Arduino, ESP32, I2C, SPI, UART, Wi-Fi, Sensor Integration  
**Development Tools:** Git, Visual Studio Code, Arduino IDE, PCB Design

## EDUCATION

**SRM Institute of Science and Technology** Trichy, Tamil Nadu  
*Bachelor of Technology in Electronics and Communication Engineering* 2022 – 2026  
– CGPA: 9.12/10.0

**Government Higher Secondary School** Tiruchirappalli, Tamil Nadu  
*Higher Secondary Education (Class XII)* 2021 – 2022  
– Percentage: 73.67% — Physics, Chemistry, Mathematics, Computer Science

**Sri Mahadeva Guruji Matriculation Higher Secondary School** Tiruvarur, Tamil Nadu  
*Secondary School Education (Class X)* 2019 – 2020  
– Percentage: 82.67% — Science, Mathematics, Computer Science

## PROFESSIONAL EXPERIENCE

**Embedded Systems Engineering Intern** Chennai, Tamil Nadu  
*Vi Microsystems* December 2023 – January 2024

- Engineered sensor interfaces achieving 95% accuracy in data acquisition and processing systems.
- Collaborated with senior engineers on firmware development and system optimization projects.
- Technologies: Embedded C, Microcontrollers, Sensor Integration, Real-time Operating Systems (RTOS)

## TECHNICAL PROJECTS

**Intelligent Wheelchair System** | EPICS in IEEE Grant Jan 2025 – Present

- Spearheaded development of voice control system supporting 7+ commands with 95% recognition rate.
- Implemented PID control reducing movement error by 85% using BTS drivers for precise navigation.
- Integrated 6 safety mechanisms reducing potential accidents by 98% through comprehensive testing.
- Led team of 6 members to complete project 2 weeks ahead of schedule and 20% under budget.
- Technologies: Arduino Mega, EasyVR 3.0, BTS Motor Drivers, Cytron Control, C Programming

**Third Eye – AI-Powered Assistive Device** Nov 2024 – Present

- Created wearable device detecting 50+ object categories with 95% accuracy using Raspberry Pi.
- Optimized ML model reducing inference time by 60% while maintaining 90% accuracy.
- Achieved 98% accuracy in currency recognition across 8 denominations with 500ms processing time.
- Reduced power consumption by 35% through efficient algorithm implementation.
- Technologies: Python, TensorFlow, OpenCV, Raspberry Pi, CNN, PCB Design

**Yog-Mithra – IoT-Based Smart Yoga Assistant** Aug 2023 – Dec 2023

- Engineered smart yoga mat with distributed pressure sensors processing 1000+ data points/second.
- Incorporated LDR sensors for precise pose tracking with machine learning models (KNN/SVM).
- Optimized real-time pose classification achieving 92% accuracy with 50ms latency.
- Programmed mobile application for real-time feedback and pose correction guidance.
- Technologies: Raspberry Pico W, Machine Learning, Sensor Fusion, Python, Swift UI, C Programming

**Ohm View – Smart Resistance Measurement System** Jun 2023 – Sep 2023

- Constructed automated resistance measurement system with custom PCB and Arduino microcontroller.
- Built interactive web dashboard using Firebase and JavaScript with responsive design.
- Formulated auto-calibration algorithm reducing measurement errors by 85%.
- Created intuitive interface for data visualization and analysis.
- Technologies: Arduino, Firebase, JavaScript, HTML/CSS, PCB Design

## ACHIEVEMENTS & CERTIFICATIONS

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- Awarded Second Runner-Up and 50,000 prize at Ola's International Management Fest for innovative IoT solution.
- Secured Runner-up position in Technical Paper Presentation on Emerging Technologies at VIT Chennai.
- Won Second Runner-up at Gyanith Hackathon (NIT Puducherry) for AI-based healthcare solution.
- Completed certification in Machine Learning (NPTEL) and Advanced FPGA Design with Verilog.

## LEADERSHIP & ACTIVITIES

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**Product Development Lead - University Incubation Team** SRM Institute of Science and Technology  
*Innovation Cell* *Present*

- Lead a team of 5 developers in creating innovative IoT and embedded systems solutions.
- Managed end-to-end product development lifecycle for 3 successful projects.
- Organized technical workshops and mentored junior team members in embedded systems development.

### Technical Contributions & Presentations

- Presented research paper on "Social Media Marketing Analytics" at SRM International Conference.
- Delivered technical presentation on "Future Trends in Electronics and IoT" at VIT Technical Symposium.
- Active member of IEEE Student Branch, participating in technical events and workshops.