BALASUNDHARAM J

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Final-year ECE student with knowledge in electronics, embedded systems, IoT, and software. Passionate about problem-solving, innovation, and taking up challenging roles with dedication and versatility.

Education:

- Meenakshi Sundararajan Engineering College, Chennai -024 | B.E in Electronics and Communication Engineering (ECE),
  2022 – 2026 | CGPA: 8.2/10
- Class XII:
  Don Bosco Higher Secondary School | State Board | May 2022 | Percentage: 84.6%
- Class X:
  St. Antony's High School | State Board | March 2020 | Percentage: 89.4%

Internships:

Intarm Technologies, Madhavaram
Software Testing Intern (online) | March 2024 – March 2024
Tested software manually and with automation tools in a virtual setup; identified bugs, reported defects, and worked with developers to ensure quality and reduce post-release issues.

NSIC, Ekkaduthangal
Full Stack Development | 2 July 2025 – 15 July 2025
Completed a Full Stack Development internship at NSIC, creating responsive web interfaces using HTML, CSS, and JavaScript. Worked on backend integration, API development, and performance optimization for seamless web functionality.

OASIS INFOBYTE
Java Development Intern (Online) | 05 Aug – 15 Sep 2025
Gained hands-on experience in object-oriented programming, building Java applications, and understanding real-world software development workflows.

PROJECTS:

Smart Water Management System :
Embedded C, ESP-Now protocol, Autodesk Fusion 360 (CAD/Product designing) and Blender (3d modelling), IoT, Industrial Sensors and Actuation
Smart Grey Water Management – Designed an innovative water automation system using industrial IoT sensors for urban residential areas with limited land availability, achieving a 50% reduction in land utilization. Integrated 5G technology to address the limitations of ESP-Now communication. Currently preparing a research paper for publication based on this project.

Color- Based Product Sorting:
Developed an **automated color sorting system** using Arduino Uno and a TCS3200 sensor to identify and sort objects by color with high accuracy. Integrated **sensor, actuator, and control logic** for a low-cost, efficient automation prototype.

Respiratory Disease Classification Using Lung Sounds (CNN-LSTM):
Python, TensorFlow, Keras, CNN-LSTM, Mel Spectrograms
Developed a deep learning model to classify respiratory diseases using lung sound recordings. Implemented a hybrid CNN-LSTM architecture to extract Mel spectrogram features and perform multi-class classification. Achieved up to 98% accuracy across seven disease categories including asthma, COPD, and pneumonia. The system enhances early diagnosis and supports real-time clinical decision-making.

SKILLS:

- *Programming Languages:* C Programming, Core Java
- *Web/Frameworks:* HTML, CSS
- *Databases & Cloud:* SQL, Firebase
- *Tools & IDEs:* Eclipse, Visual Studio Code, SQL Workbench, Excel, GitHub, MS Office
- *CAD/Design:* Canva, KiCad (PCB designing)
- *Soft Skills:* Leadership, Problem Solving, Design Thinking, Communication

Courses & Certifications:

Programming in Java | Udemy | Feb 2025
Data Science & Analytics | HP LIFE | Feb 2025
Matlab Onramp | Mathworks | Aug 2025
VLSI Course | Simplilearn | Sep 2025
Other Certifications:
MongoDB Basics for Students | MongoDB | 06 Jun 2025

AWARDS & ACHIEVEMENTS:

- **Grand Finalists** in Smart India Hackathon 2024 held at PIET, Haryana.
  Serving as **Team Member**, I contributed to our project Smart Water Management to secure a position among the grand finalists in the SIH2024.

- Participated in paper presentations and tech events at Saveetha Engineering College to enhance technical skills, communication, and problem-solving abilities.

LEADERSHIP & EXTRACURRICULARS :

- **Symposium Event Coordinator, Meenakshi Sundararajan Engineering College PRANAV2K25**
  Led and organized non-technical events to foster creativity, teamwork, and engagement.
  Developed strong leadership, organizational, and communication skills through effective event management.
- **Volunteer in NSS – National Service Scheme (2022-2026)**
  Participated in community service initiatives promoting social awareness and environmental sustainability. Contributed to activities like blood donation, cleanliness drives, and tree plantations.
- **Kabaddi Team Leader, Meenakshi Sundararajan Engineering College**
  Led college-level Kabaddi team, demonstrating strong leadership, teamwork, and strategic decision-making skills in competitive sports environments.

INDUSTRIAL EXPOSURE :

- Force Of Rapid Transformation (FORT), Nov 2023
- NLC India Limited, Oct 2024
- Sathish Dhawan Space Centre (SHAR), Apr 2025

Languages Known: Tamil, English,