S RUPESH

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SUMMARY

I am a pre-final year **B.E. Computer and Communication Engineering student (2023–2027)** with hands-on experience in **IoT, embedded systems, and web development**. I'm passionate about using technology to solve real-world challenges through **smart automation, assistive devices, and sustainable systems**. I take a practical, experimental approach—driven by **continuous learning and innovation**. With growing expertise in **Generative AI, microcontroller programming, and data analytics**, I aim to develop **scalable, intelligent, and impactful solutions** for modern technological challenges.

EDUCATION

Bachelor of Engineering in Computer and Communication Engineering   **Sep 2023 - May 2027**
Rajalakshmi Institute of Technology
- CGPA: 8.55

School   **Aug 2021 - April 2023**
Sree Narayana Mission Senior Secondary School
- Marks: 79%

INTERNSHIPS & EXPERIENCE

Winter Intern - NSIC Technical Services Centre   **Dec 2024 - Jan 2025**
Contributed to IoT solution design and deployment for daily-life improvement, focusing on Raspberry Pi integration, Python sensor programming, automation, and documentation.
Key Projects
- **Smart Walking Stick:** Built a Raspberry Pi-based device with ultrasonic sensors, improving obstacle detection by 80% for visually impaired users.
- **Temperature Monitoring System:** Built a real-time logger using DHT11 and Raspberry Pi, achieving 95% accuracy over manual methods.

Intern - SortyX Ventures Pvt. Ltd. (Startup)   **May 2025 - Jun 2025**
During my internship, I contributed to the development of smart automation systems aimed at enhancing efficiency in waste and water management.
Key Projects
- **Smart Bin:** Implemented a sensor-enabled waste bin to detect fill levels and optimize collection schedules.
- **Water Monitoring System:** Developed a real-time solution for tracking water levels and quality, enabling proactive maintenance.

PROJECT

Smart Traffic Monitoring System based on V2I Communications (IoT & Embedded Systems)   **Jan 2025 - April 2025**
Developed a real-time IoT framework using ESP32 and sensor integration for vehicle-to-infrastructure (V2I) communications. Applied embedded C, wireless protocols, and low-latency networking to enhance traffic safety, automate signal alerts, and improve fuel efficiency under dynamic conditions. Results published in 5th International Conference on Soft Computing for Security Applications (ICSCSA), August 2025; see Publications section.

College Event Engagement Analysis (Data Analytics & Visualization)   **September 2025 - October 2025**
Leveraged Python, Pandas, and Jupyter Notebook to perform data cleaning, exploratory data analysis (EDA), and sentiment analysis on event participation datasets. Utilized Matplotlib and Seaborn for data visualization, uncovering engagement trends and optimizing event strategies.

AskAIMee – AI Chatbot Application (Conversational AI/GPT Agent)   **September 2025 - October 2025**
Developed an advanced conversational AI agent utilizing modular frameworks (Lovable UI, Lyzr backend). Implemented natural language processing (NLP), prompt engineering, and API integration to enable contextual, human-like dialogue and interactive, adaptive user experiences.

SKILLS

- **Embedded and IoT:** Arduino, Raspberry Pi, ESP32, UART, SPI, I2C; sensor integration, V2I communication
- **Programming:** Python, C, Embedded C, Java
- **Data Analytics & Visualization:** Power BI, MS Excel, Pandas, Seaborn, Matplotlib
- **Tools & Platforms:** Figma, Git, Canva, Jupyter Notebook, Replit, Lovable, Emergent, collaborative coding platforms
- **Web Development & UI/UX:** HTML, CSS; Frontend prototyping, responsive design
- **AI & Machine Learning:** Generative AI, conversational AI, NLP, prompt engineering
- **Soft Skills:** Content writing, Analytical thinking, Organization & Planning, Cross-team collaboration
- **Languages:** English, German, Hindi

PUBLICATIONS

Autism Detection using InceptionV3 and Security using Blockchain (IEEE, Nov 2024) - Developed a deep learning model for facial analysis, secured by blockchain for real-time healthcare monitoring. DOI: 10.1109/ICECA63461.2024.10800815

Solar Energy based Smart Home Monitoring and Automation using IOT (IEEE, Oct 2024) — Engineered a solar-powered IoT system for remote energy analytics and smart home optimization. DOI: 10.1109/ICPECTS62210.2024.10780112

IoT-Enabled Intelligent Traffic Signals for Optimizing Smart Cities using V2I Communications (IEEE, Aug 2025) — Designed IoT and embedded ESP32 framework for real-time vehicle-to-infrastructure communication and traffic safety analytics. DOI: 10.1109/ICSCSA66339.2025.11171093

CERTIFICATIONS

Coursera Certified — Business Analysis & Process Management **| Outskill Certified** — Generative AI Mastermind (2-day intensive workshop), Gen AI Engineering Mastermind **| NPTEL Certified** — Privacy and Security in Online Social Media **| Growcline Certified** — ReactJS and CSS Workshop **| Great Learning Certified** — Agile for Beginners, UI/UX Intermediate, Swift for Beginners **| Cognitive Class Certified** — IBM Essentials in Cloud **| Simplilearn Certified** — Power BI for Beginners **| Scaler Academy Certified** — Become a MAANG Engineer **| Skillo Certified** — The AI Revolution (3-day intensive workshop)

LEADERSHIP & ACHIEVEMENTS

- **Executive Member, CCE Association:** Mentored departmental events.
- Runner-up, SparkUp Startup Pitching (IEEE Student Chapter).
- Recognized for active participation, Apple Centre of Excellence.
- Conducted ByteSafe: Cybersecurity hands-on workshop (one-day event).
- Creatives & Designing Head, Rotaract Club of RIT (2025–2026).

COURSEWORK INFORMATION

Data Structures and Algorithms | Object Oriented Programming | DBMS | Exploratory Data Analysis | Cloud Computing | Python for Data Science | Computer Networks | Artificial Intelligence | Probability and Statistics | Linear Algebra | Discrete Mathematics | Text and Speech Analysis |