Shubham Kulkarni

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Summary

Innovative and **result-oriented Electronics and Telecommunication Engineering student** with a strong foundation in **embedded systems**, **IoT**, and **electro-mechanical product development**. Demonstrated expertise in designing and implementing **smart automation solutions**, most notably the **Smart Irrigation System** that earned **University Rank 2 in the SPPU Startup Olympiad 2025**. Skilled in integrating **hardware (Raspberry Pi, sensors)** with **software (Python, APIs, ML)** to build scalable, intelligent systems. A quick learner with a passion for **technology, R&D, and product innovation.**

Education

- **Dr. Vithalrao Vikhe Patil College of Engineering, Ahilyanagar (7.5/10 CGPA)**
  BE in Electronics and Telecommunication (2021 – 2025)
- **Residential Arts, Commerce, and Science Junior College (87.5%)**
  HSC (2020 –2021)
- **Dyansarita Vidyalaya, Ahilyanagar (75.2%)**
  SSC (2018 – 2019)

Technologies

- **Programming Languages:** Python, SQL, HTML5, CSS3, MATLAB
- **Cloud Platforms:** AWS, Microsoft Azure, Google Cloud Platform (GCP)
- **Platforms:** Windows, Linux
- **Tools and Frameworks:** Git, Docker, Postman, Jupyter, React, Flask, Django
- **Databases:** MySQL, PostgreSQL, Oracle, SQL/PLSQL
- **Hardware:** Raspberry Pi, Arduino, soldering, PC building, circuit prototyping
- **Development Practices:** Agile, Test-Driven Development (TDD), Continuous Integration/Deployment (CI/CD)

Work Experience

○ Artificial Intelligence Intern – IBM India Pvt. Ltd. (Jun 2023 – Aug 2023)

- Designed and deployed a sophisticated **AI-based Mental Health Fitness Tracker**, achieving a **90% accuracy rate** in mood detection through advanced natural language processing techniques.
- Led model evaluation, debugging, and optimization strategies to ensure high system reliability.
- Collaborated with cross-functional teams to ensure smooth project delivery and integration.

○ Embedded Systems Intern – Emertxe Information Technologies (Feb 2024 – Apr 2024)

- Designed and implemented multi-mode architecture for a simulated washing machine using PIC microcontrollers.
- Developed and tested a PICsimlab-based simulation model, improving mode-switching accuracy by 20%.
- Strengthened practical knowledge in embedded C, circuit design, and modular system development.
- Gained hands-on experience in debugging embedded hardware and improving simulation performance.

- **Artificial Intelligence Intern – MathWorks** ***(May 2023 – Sep 2023)***

  - Successfully completed the MathWorks Virtual Internship Program on "Getting Started with Artificial Intelligence," supported by AICTE and NEAT.
  - Gained hands-on experience with AI workflows including data preprocessing, model training, and performance evaluation using MATLAB.
  - Applied foundational AI techniques to solve real-world problems through project-based learning modules.

Projects

- **Alumni Management Portal** ***(June 2024 – Present)***

  - Architected a highly scalable backend infrastructure using **Django, Flask, and MySQL** to facilitate seamless alumni interactions.
  - Integrated secure user authentication systems and leveraged **AWS Cloud Storage** for scalable data management.
  - Conducted continuous testing and debugging to optimize system performance.

- **Smart Irrigation System** ***(Smart India Hackathon 2023 – AIR 1; University Rank 2 – SPPU Startup Olympiad 2025)***

  - Engineered an IoT-powered irrigation solution integrating AI models and sensor data to optimize water usage.
  - Achieved a **30% reduction in water wastage** through data-driven irrigation scheduling strategies.
  - Applied Agile development practices to ensure timely delivery of solution components.

- **Line Following Robot** ***(Mini Project – Jan 2024 to May 2024)***

  - Designed and developed an autonomous line-following robot using Arduino Mega and IR sensors for real-time path detection.
  - Engineered optimized path-following algorithms, achieving 95% course accuracy in complex circuit simulations.
  - Simulated and evaluated multiple control strategies to enhance response time and turning precision.
  - Demonstrated strong foundations in embedded systems, robotics, and automation

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Extracurricular Activities

- **AIR 1 Winner** – Smart India Hackathon 2023 for innovative problem-solving.
- **University Rank 2** – SPPU Startup Olympiad 2025 for the Smart Irrigation System idea.
- **Runner-Up** – AI Hackathon by TIAA Global Pvt. Ltd. for developing an innovative AI-powered solution aimed at financial data analytics.
- Completed 6-day **Innovation Design and Product Development Training** by the Government of India at Nagpur and Visakhapatnam
- Served as **Campus Ambassador** for GeeksforGeeks, promoting programming knowledge and technical events on campus.

Personal Details

- **Date of Birth:** 21st February 2004
- **Languages Known:** English, Hindi, Marathi
- **Address:** Shrirampur, Ahilyanagar, Maharashtra, India
