Pratul Deshpande

Pune, Maharashtra • pratul.deshpande06@gmail.com • 08767381060 • in/pratuldeshpande • pratuldeshpande.com

SUMMARY

E&Tc undergraduate specializing in embedded systems and software development. Proficient in Python, UDS, and Embedded C and fundamentals of Quantum Computing with experience enhancing process efficiency in multinational environments.

SKILLS

Programming Languages: Python, Embedded C, C++, JavaScript, SQL
Hardware & Embedded Platforms: ESP32, Raspberry Pi, Arduino, ARM Cortex,
Web Technologies & Databases: React.js, Node.js, Flask, Docker, PostgreSQL
Tools & Software: Git, Linux, MATLAB, Simulink, Render, VS Code, PyCharm, JIra, Microsoft Excel, Teams,
Design & Simulation: PCB Design (Proteus, KiCad), Circuit Simulation (N1 Multisim)
Quantum Computing: Qiskit, IBM Cloud
Protocols: UDS (ISO 14229), OBD II, I2C, SPI

EXPERIENCE

Software Development Intern | Lear Corporation | Pune, Maharashtra | June 2025 - August 2025
- Developed and implemented scalable Python libraries to automate **24+ UDS diagnostic services**, reducing manual testing time by **60%.**
- Engineered and deployed custom python libraries using the **PySTA framework** to expand testing capabilities for multiple diagnostics test scenarios.

Technical Intern | Makewell Electronics Services | Nashik, Maharashtra | December 2024 - February 2025
- Designed and tested 3 variations of a 20-socket tray for **ATLAS COPCO**, achieving a **98%** quality assurance pass rate and reducing client assembly time.
- Engineered, tested, and validated industrial **PLC systems**, ensuring compliance with performance and safety standards in Industrial environments.

EDUCATION

B.E in Electronics & Telecommunication | PVG's College of Engineering, Technology and Management | Pune, Maharashtra |

Higher Secondary Certificate (HSC) | Matoshri College of Management and Research Centre | Nashik, Maharashtra | 2022 | 78.83%

Secondary School Certificate (SSC) | New Era English School | Nashik, Maharashtra | 2020 | 90.20%

SELECTED PROJECTS

AI based IOT System for Monitoring and predictive maintenance of Pulse Jet Bag Filters. | Ionfiltra Pvt. Ltd.
- Implemented an **IoT system** for industrial filters, implemented master-slave based real-time sensors to transmit data to the cloud with **98% reliability**.
- Deployed an **AI**-empowered **React/Flask** dashboard with **92% accuracy** in anomaly detection, successfully predicting filter failures in advance.
- Deployed a containerized **PostgreSQL** solution handling **1,000+ write operations per min** while ensuring zero data loss during high-load periods.

QAOA Based Route Optimizer | quantum.pratuldeshpande.com
- Solves Vehicle Routing Problems (VRP) using the QAOA algorithm with **98%+ accuracy** on small-scale datasets, on openstreetsmap API based map.
- Integrates **IBM Qiskit** via React/Flask to execute jobs on real quantum computers with **2 distinct quantum architectures** for real world routing problems.
- Optimizes **3–4 nodes (~16 qubits)** with **<3s response latency** with **classical alternative** (on device processing) for relative comparisons.

Diagnostic Library Implementation in PYSTA | Lear Corporation
- Architected a comprehensive UDS based Python library supporting **24+ UDS services**, slashing test-authoring time by **60%**.
- Standardized testing procedures across multiple teams by developing a **consistent and reproducible framework**, ensuring high-quality results.

Real-Time Stress Detection System using HRV | PVG's COET&M, Pune
- Led the end-to-end development of a health monitoring system for real-time **Heart Rate Variability (HRV)** analysis and Stress prediction.
- Collected and processed data from **20+ subjects**, implementing algorithms that achieved **85%** accuracy in real world scenarios.

PUBLICATIONS

Quantum-Assisted Techniques to Optimize Modern Supply Chain Challenges | NCRICSIT | 2025

Gender-based violence in the Video Games | International Conference on Gender Equality & Women Empowerment (ICGEWE) | 2024

INVOLVEMENT

General Secretary of Students Association | PVG's COET&M, Pune | Telecommunication Engineering Students Association (TESA) |
- Successfully organized **11** technical and non-technical events, engaging over **2000** students and leading one of the most accomplished association of Institute.

National level competition Finalist | IIT Bombay | National Entrepreneurship Challenge (NEC)) | E-Summit |
- Part of the 15 finalists from my institute to represent Ed-Cell PVG at the NEC organized by IIT Bombay.