

Kshitij Patil

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EDUCATION

Vishwakarma Institute Of Technology

Pune, India

Bachelor of Technology in Electronics and Telecommunication

Graduated June 2023

- Relevant Courseworks: Data structures and algorithms, Operating System, Object Oriented Programming, Computer Architecture.
- Skills acquired: C++, C, Python, Java, Design, Cloud, AWS, Firmware Development, Embedded Software Development, Deep understanding of Unix, Distributed Systems, File System.

EXPERIENCE

Espressif Systems

July 2023 – Present

Associate Software Engineer

Pune, India

- Led development and spearheaded Matter protocol integration for esp-aws-expresslink (project owner), establishing it as a leading two-chip solution for ESP32 AWS and Matter connectivity.
- Introduced key connectivity features, including LWT, variable keep-alive timeout, and BLE support, along with related debug commands.
- Improved the reliability and significantly expanded the feature set of esp-aws-iot (project owner), delivered a production release, and implemented a pytest testing framework that reduced testing time by 40%.
- Increased overall productivity by designing customized FreeRTOS based firmware solutions incorporating memory optimizations, feature enhancements and targeted test scripts to ensure robust performance

Espressif Systems

January 2023 – June 2023

Application Engineer Intern

Pune, India

- Applied socket programming expertise to achieve near-uninterrupted (drop rate improved to 0%) connectivity and engineered low-power modes to optimize device performance in all the applications.
- Architected an advanced telnet client enabling users to access and interpret host device logs and facilitate command transmission, with support for 5 Espressif MCUs.
- Created a Python script automating the build, flash, and test processes for diverse Devices Under Test (DUTs), incorporating various esp-idf branches and esp-aws-iot releases.

ACHIEVEMENTS

Achieved **Global Rank 1811** in Google Kickstart Round A 2022, showcasing problem-solving skills and competitiveness on a global scale. [View Certificate](#)

Attained a 5* rating on CodeChef with the highest rating of **2013**.

Secured the Highest Rating on LeetCode, reaching **1770** and placing in the **top 8.46%** globally.

Achieved the Highest Rating on Codeforces, reaching **1426**.

PROJECTS

OptimOS | C, assembly

March 2025 – Present

- Developing a kernel from scratch to deepen understanding of operating system fundamentals, including multi-tasking, memory management, and process management.
- Gaining practical experience in kernel design patterns, ELF file loading, security techniques for handling malicious programs, and kernel debugging using GDB.

Drivable Road Detection System | Python, Computer Vision — [View Project](#)

June 2022 - November 2022

- Computer vision based project which focuses on detection of drivable roads in different traffic conditions.
- Employed a classical machine learning approach, yielding **86.48%** accuracy.

Project Kuber | Python

May 2024 - August 2024

- Formulated and produced a Python-based event-driven trading framework for the Indian stock market, enabling systematic trading based on predefined rules and achieving a **23%** returns.