

Kartikaye

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Projects

Smart Irrigation System

🕒 Jan 2025 - May 2025

- Developed a zone-based automated irrigation system using simple setup of Arduino Uno, solenoid valves and relay for efficient irrigation as well as water conservation.
- Enabled Wi-Fi-based monitoring and manual override over the same network.
- Incorporated real-time feedback via an LCD interface.
- Designed a custom PCB and created a 3D CAD model for future use and easy scalability.
- Tools Used: Arduino Uno, NodeMCU, Fusion 360, KiCad, Fritzing

Surface Plasmon Polariton Model

Feb 2025 – April 2025

- Built a working laser spectroscopy model to demonstrate Surface Plasmon Polariton (SPP) using a gold-coated prism and 650nm red laser.
- Implemented a precision angle-measuring mechanism with a rotary stage and photodetector controlled by Arduino.
- Tools Used: Arduino Uno, Laser Diode, Photodiode, Gold Prism, GNUplot

Personal Projects

Low Profile Mechanical Keyboard

🕒 June 2025

- Hand-wired a 71-key low-profile mechanical switches by implementing its circuit in a matrix layout that can be adjusted to any custom profile.
- Coded the ZMK firmware from scratch to fit the particular profile.
- Created a 3D printed plate to fit the switches with precision.
- Tools Used: Fusion 360, Nice!Nano V2, Git, ZMK Firmware

Experience

Fiverr

Sept 2021 – Sept 2022

Freelancer

- Reached Level One Seller on Fiverr with a strong track record of client satisfaction.
- Completed 50+ freelance projects across illustration, vector tracing, and vaporwave/retrowave design.
- Earned 45+ 5-star reviews, maintaining a consistent reputation for quality and timely delivery.

Technical Proficiency

Programming Languages: C, C++, Python, Embedded C, Arduino, Bash

Design & Fabrication: Fusion 360, Adobe Photoshop, Illustrator, Fritzing, KiCAD, PsPice

Software & Misc: Git, VS Code, Linux, LaTeX, After Effects, Procreate

Awards & Achievements

- Awarded Certificate of merit for highest marks in **Subject:** English, CBSE Board (2018)

Education

University of Delhi

Sept 2023 – May 2025

MS in Physics

- **Core Subject:** Advanced Electronics

BS in Physics

Sept 2018 – May 2021