

# Prodyumna Pal

Software & Electronics Developer || Research Author

+91 8777595690 prodyumna.pal\_btech24@gsv.ac.in Available on LinkedIn, Github, Google Scholar, ORCID  
Vadodara, Gujarat



## SKILLS

**Electronics:** Arduino/ESP IoT, Embedded C, Drones & Unmanned Systems, CAD, PCB Design, Telemetry, Mechatronics

**Web Development:** Web Development, Web Application, Front End Development, Software Engineering

**Languages and Tools:** Python, HTML, CSS, Javascript, JSON, Node.js, C, GitHub, Algorithms, OpenCV, Blink IoT Core

**Graphics and Engagement:** User Experience/User Interface, Filmora, Canva

## EXPERIENCE

### Software & Electronics Developer

12/2021 - Present

#### SPARK

My personal collaborative environment focused on innovative product development.

- Ideated new product concepts with R&D, leveraging emerging technologies of IoT and Web development.
- Collaborated with cross-functional teams for viability assessments and solving real-world problems.

### Associate Member

01/2025 - Present

#### SAEINDIA

An educational and professional organization advancing automotive technology.

- Developer in **Mechatronics Domain** of SAE India Collegiate Club of GSV.
- Designed UAVs, RC Cars and intelligent automotive projects.

### Editor-in-Charge

10/2022 - 12/2023

#### Team Graphics

Led a creative team focused on graphics and video production for events.

- Organised and Mentored a graphics and video-editing team for programs including Chrysalis 2022 for an audience of 5000, a 12 hr video project.
- Leveraged Adobe Premiere Pro and Filmora for professional-quality outputs, increasing positive feedback by 70%.

### Editor

09/2020 - 07/2022

#### Scratch Wiki

Community-driven platform for sharing development resources.

- Authored guides in the Scratch Wiki, to assist other budding developers with guides.

## EDUCATION

### B.Tech in Electronics and Communication (Spec.: Rail)

Vadodara, Gujarat

Gati Shakti Vishwavidyalaya, Ministry of Railways

09/2024 - Present

### High School || School Captain

Delhi Public School, (Joka) South Kolkata, CBSE

Kolkata, WB

04/2018 - 03/2024

## KEY ACHIEVEMENTS

### Recognition for Railway Electric Monitor Project

Awarded the **Certificate of Merit 2022-23**, Annual Science Fair, **Birla Industrial and Technological Museum**, Ministry of Culture, Govt. of India

### GitHub OSS Developer

Ranked 'A+' in Open-Source Software (OSS) Development by GitHub (2021-22)

### Science Olympiad Foundation

SOF IGKO (**Zonal Distinction**) 2021, IMO (**Academic Excellence**) 2023 & 10 more over 5 years of Participation



## RESEARCH PAPERS

### Prolonged Suspicious Inactivity Monitoring of Old Aged People

[International Journal of Scientific Research in Engineering and Management \(IJSREM\)](#) I.F: 8.17

01/2024

Vol 8, Issue 1

An IoT Arduino and GSM/LTE based Safety Monitoring System for Old Aged People Staying Alone in Apartments

### Event Identification with Motion Detection

[International Journal for Multidisciplinary Research \(IJFMR\)](#) I.F: 9.24

06/2024

Vol 6 Issue 3

Identifying events through simplified fundamentals as an enhancement for the potential of applied motion detection technology, rendering interaction of computers to the physical world.

## PROJECTS

### Operation Clatsop

11/2024 - Present

A state-of-the-art UAV project focusing on internet-based control.

- Engineered a **bicopter drone** with high-end **mechatronics** and **thrust vectoring** capabilities.
- Programmed a **custom flight controller** using ESP32 for internet-based control from scratch.
- Developed **semi-autonomous modes** and smart control systems with advanced sensors.
- Conducting ongoing research on target locking and engagement for **Fire-and-Forget** Technology.

### The Quiz Live

03/2023 - 04/2023

An interactive web-based quiz designed for large audience participation.

- Used coding and frameworks to render a **real-time interactive quiz** for Despedida '23, engaging an audience of 700.
- The quiz featured questions on a stage screen with mobile phone responses including audio, video, and images.
- Applied **strategic algorithms for cloud** load management.

### Railway Regenerative Electric Monitor

11/2022 - 12/2022

Computer Vision and Electrical Circuits as an augmented System.

- A project focusing on enhancing sustainability in railway systems.
- Developed and presented an innovative concept demonstrating complementary uses of railway regenerative braking.
- Recognized at the BITM National Science Fair with over 1,000 attendees and delegates.

