

# Kinshuk Pandala

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## Education

### VIT Bhopal University

Pursuing Bachelor of Technology in Electronics and Communication, 8.02 CGPA  
(Specialization in Artificial Intelligence and Cybernetics)

Madhya Pradesh, India  
September 2023 – Present

### Narayana PU College

CBSE Board, Class XII, 70.00%

Bengaluru, India  
May 2023

### Narayana Olympiad School

CBSE Board, Class X, 90.00%

Bengaluru, India  
May 2021

## Skills

**Technical Skills:** Signal Processing, Communication Systems, Machine Learning, UI/UX Design

**Technologies:** Embedded Systems, Internet of Things (IoT), Wireless Communication

**Hardware & IoT:** Raspberry Pi, ESP-32, Arduino

**Security & Network:** Basic Cryptography (Encryption, Wireless Security), Wireless Protocols

**Software Tools:** MATLAB, Arduino IDE, LTSpice, Android Studio, Figma

**Languages:** Python, C, MATLAB, Java, Verilog

## Projects

### QUENCH: Smart Water Vending Machine,

January 2025 – Ongoing

Developing an IoT-enabled smart water vending system integrating wireless communication for dynamic payment verification and real-time monitoring.

- Implements a **Quantity-based Unique Electronic Networked Control for Hydration** to ensure controlled and efficient water dispensing
- Features a **Dynamic QR Code-based Payment System** with secure, wireless transaction verification
- Integrates **IoT and real-time wireless communication** for remote monitoring and system updates
- Utilizes **error-detection mechanisms** in digital transactions, leveraging coding theory for data integrity
- Enhances precision through **flow sensor-based metering** and adaptive dispensing algorithms

### Rewind: RAG-Based Historic Chatbot,

February 2025 – Ongoing

Developed a machine learning-based chatbot that retrieves and generates responses using Wikipedia data.

- Implemented **Retrieval-Augmented Generation (RAG)** to enhance chatbot accuracy using Wikipedia-sourced data
- Built using **Python, LangChain, Hugging Face Transformers, and OpenAI API**
- Designed a **custom retrieval system** to extract relevant historical facts dynamically
- Optimized the model's response generation using **fine-tuned embeddings and vector databases**

### Wi-Fi Controlled RC Car using ESP8266, [Source Code Link](#)

September 2024 – December 2024

Developed an IoT-based RC car enabling real-time wireless control via Wi-Fi.

- Built using **ESP8266 (NodeMCU), L298 Motor Driver, Wi-Fi AP Mode**
- Programmed the **microcontroller firmware** for motor control and wireless communication
- Designed a **web-based control interface** to send movement commands via HTTP requests
- Implemented **OTA updates** for remote firmware upgrades

## Additional Info

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**Coursework:** Random Processes, Signals and Systems, Multimedia Signal Processing

**Achievements:**

- Secured a **Top 5 position** in a university-level CTF competition.
- Served as **Cultural Captain** in school, leading events and fostering a vibrant cultural atmosphere.

**Hobbies:**

- **Singing** – Passionate about music with a **Grade 2 level certification** in playing the keyboard.
- **Cycling** – Participated in **Decathlon's cycling meetups** held in Bangalore, engaging with fellow enthusiasts and exploring city routes.

**Languages:** English, Hindi, Telugu, Kannada