

SARANSH PATEL

[Twitter](#) | blog - <https://sarpat.github.io/blog/> | github-[SARPAT](#)
Email-saranshappy@gmail.com | IEEE : [IEEE Public Profile](#)

EDUCATION

ABES Engineering College, Ghaziabad Affiliated to Dr.A.P.J Abdul Kalam Technical University, Lucknow

Bachelor of Technology in Computer Science(2023-2027)

Expected oct 2027

Semester 1: CGPA-8.32

Semester 2: CGPA-7.96

Semester 3: CGPA-7.84

Semester 4: CGPA-7.57

Overall CGPA(till 4th semester) : 7.92

Class 10th Passed-2020 Holy Cross School(CBSE), Madhepura , Bihar

Percentage : 90.8%

TECHNICAL SKILLS

Languages: C, C++, Python, QISKIT

Software: Git, GitHub, Linux(Ubuntu LTS), Visual Studio Code, Jupyter Notebook, Google Colab

Additional: HTML, CSS, QNIVERSE PLATFORM, CAMARA Project

Technical Electives(Courses Completed)

Current Semester - 6th

Jan 2026 – April 2026

- Data Structures, Theory of Computing, Computer Organization, Technology and Society, System Management
- Operating Systems, Probability and Statistics, Databases and SQL, Algorithm Design and Analysis
- Linear Algebra and Advanced Calculus , Soft Computing, Web Technology

Interests

Quantum Computing: Learning Quantum Algo, Learning Qiskit, Focused especially on Hybrid Quantum-classical Neural Networks.

GPU Programming/HPC/Parallel computing : Learning and Hand-on Practice with CUDA, MPI, OpenMP

Networking APIs(CAMARA/OPENGSM): Utilising Networking APIs for developing innovative applications.

PROJECTS

Arduino Based Radar System

Tech Stack : C/C++, ARDUINO IDE, Python, Processing IDE

- Built an Arduino-based radar system using ultrasonic sensing, servo control, and Python visualization to detect and represent object distance in real time.
- Implemented keyboard-controlled servo override (“S” to stop, “R” to resume) and created a visualPython animation showing object movement relative to the sensor.

OpenCV Project

Tech Stack : OpenCV, YOLO, Python 3.9

- Utilised opencv for facial detection and hand Gesture Detection.
- Demo-[Githublink](#)

RAG Agent for Chatting with Documents

Tech Stack: Langchain , LlamaIndex, Gradio.io, Nvidia Embedding Models, FAISS Vector Store, Jupyter Notebook

- This project focuses on building a Retrieval-Augmented Generation (RAG) agent using Large Language.
- The RAG agent can interact with uploaded documents such as research papers from arXiv.

- A Gradio interface allows users to chat naturally with uploaded documents.

- Demo-[Githublink](#)

Simswap-Prototype(Networking APIs)

Tech Stack : TypeScript, OAuth 2.0, JWT,GSMA Open Gateway(CAMARA)SIM Swap API.

- Built a SIM Swap API prototype using GSMA Open Gateway with JWT-based OAuth 2.0 authentication in a server-to-server Node.js environment.

- Demo-[Githublink](#)

Hybrid Quantum-classical RAG

Tech Stack : Python, LangChain, PennyLane, Qiskit (IBM Quantum), NVIDIA NIM, FAISS, Gradio.

- Custom 16-qubit kernel on IBM's 133-qubit 'Torino' QPU to investigate quantum semantic re-ranking.

Implemented PCA-based dimensionality reduction.

- Demo-[Githublink](#)

Client-Server Arch. using Raspberry Pico W

Tech Stack : Raspberry pi pico W, MQTT Protocol, AWS Cloud, Ultrasonic sensor(HC-SR04), Breadboard

- Created a client-server to send sensor data to AWS Cloud utilising MQTT Protocol.

CERTIFICATIONS

IBM,PBEL Equivalent to Virtual Internship - IOT

Issue Date:Aug 4,2025

● [Link to certification](#)

- Completed a multi-week virtual IoT internship, covering IoT fundamentals, device-to-cloud communication, and rapid prototyping best practices.
- Designed and built a **smart home automation** prototype — defined system architecture, integrated sensors and actuators, implemented control logic and remote monitoring.
- Demo-[Githublink](#)

NVIDIA, Building RAG Agents with LLMs

Issue Date:Oct 3, 2025

● [Link to certification](#)

- Learned the end-to-end workflow of **Retrieval-Augmented Generation (RAG)**, including document ingestion, embedding creation, vector search, and LLM response generation.
- Built and evaluated **RAG-based AI agents** with NVIDIA tools, focusing on improving retrieval accuracy, latency, and overall agent performance.

NVIDIA Academy, InfiniBand Essentials

Issue Date:Oct, 2025

- Gained hands-on understanding of **InfiniBand architecture, RDMA communication, and high-performance networking concepts** used in data centers and HPC clusters.
- Learned how to **configure, optimize, and troubleshoot InfiniBand fabric components** to improve bandwidth, latency, and overall system performance.

Cisco Networking Academy,Introduction to IoT and Digital Transformation

Issue Date:July 21, 2025

● [Link to certification](#)

- Understood core IoT concepts and how connected devices, automation, and data-driven technologies drive digital transformation across modern industries.

IEEE ComSOC, GenAI Meets 5G & 6G: Unlocking the Future of Networking

Issue Date:Oct 22, 2025

● [Link to certification](#)

- Explored the intersection of **Generative AI with 5G/6G networks**, including insights from [Prof. Mischa Dohler](#) on

future network architectures and the expected rise in **uplink capacity and intelligent connectivity**.

Quantum Certifications

- **CDAC Bengaluru, Qniverse Developer Certificate** *Issue Date:Nov 26, 2025*
 - Certificate of Achievement, Certificate No: CDAC/QT/QCC/0012
 - Exhibited proficiency in Quantum Computing principles and Algorithm Design through Qniverse.
 - One of the top Performers , Marks- 88/100.
- **QISKIT GLOBAL SUMMER SCHOOL 2025-QUANTUM FUNDAMENTALS** *Issue Date:Aug 29, 2025*
 - [Link to certification](#)
- **CDAC-KOLKATA, INTRODUCTION QUANTUM NATURAL PROCESSING** *Issue Date:Sept 18, 2025*
 - Certificate of Participation , Certificate No: CDAC/QT/QNLP/0095
- **CDAC-KOLKATA, QUANTUM COMMUNICATIONS TO CRYPTOGRAPHY** *Issue Date:Sept 19, 2025*
 - Certificate of Participation, Certificate No: CDAC/QT/QCC/0012
- **CDAC-KOLKATA, APPLICATIONS OF QUANTUM COMPUTING IN AGRICULTURE** *Oct 15 -29, 2025*
 - Certificate of Participation, Certificate No: CDACK/QT/AQCA/0087
- **CISCOBadge , Introduction to IOT** *Issue Date:July 21, 2025*
 - [Link to certification](#)

Artificial Intelligence for Your Business and Design Thinking-Workshop

Held On:April 15-21, 2025

- Certificate of Participation,Organised by- INurture Incubation Foundation,ABES Engineering College

EXTRA-CURRICULAR

- **IEEE STUDENT MEMBER(2 year Membership Milestone)**
 - IEEE Collabtrec Public URL-[collabtrec](#)
- **ATHELETICS**
 - **AAGAZ'24 STATE LEVEL ANNUAL SPORTS FESTIVAL,HBTU KANPUR** *13th-15th April,2024*
 - Event:Relay Race(4*200m)Boys Position : 1st(Gold medal)
 - Event:800m Boys : Position - 2nd (silver medal)
 - Event:400m Boys : Position - 2nd (silver medal)
 - **UTSAAHA ,ANNAUL SPORTS MEET (2023-2024), ABES EC** *10th May, 2024*
 - Event : 800m Boys Position - 1st (Gold medal)
 - Event : 4*200m Relay Boys : Position - 1st (Gold medal)
 - Event : Volleyball Boys : Position - 1st (Gold medal)
- Long-standing involvement in athletics since childhood, while balancing my academics.