RIKIN PAREKH

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EDUCATION

Bachelor of Technology in Information and Communication Technology,
Pandit Deendayal Energy University   Expected 2027

- **CGPA:** 9.11/10.0 [upto 4th Semester]

- **Coursework:** Digital Signal Processing, Probablity and Statistics, Data Structures and Algorithm, Computer Organisation and Design, Analog Circuit Design, Database Management System, 3D Modeling

HSC - 12th Grade, Best Higher Secondary School   2023

SKILLS

Programming Languages	Python, C, Embedded C, Assembly, MATLAB, Java, Javascript, SQL
Microcontrollers and Platforms	Arduino, ESP32, ESP8266, Raspberry Pi, STM32
Frameworks and Tools	Microchip Studio, OpenCV, TensorFlow, Scikit-learn, Django, Flask, Rest APIs Solid Works, Git, Numpy, Pandas, Linux

EXPERIENCE

Electronics and Embedded Systems Engineer Intern,
Center for Creative Learning, IIT Gandhinagar   July 2025 – Present

- Worked under Prof. Manish Jain to design and build advanced electronics and digital-systems projects for India Semiconductor Mission (ISM).

- Gained in-depth expertise in AVR assembly programming and ATmega328P microcontrollers, writing driver code from scratch for graphical LCD/LED displays. Designed and assembled an 8-bit computer from the ground up on breadboards, covering CPU architecture, control logic, and memory design.

- Presented work to national dignitaries including Shri S. Somnath, Union Ministers Dharmendra Pradhan & Ashwini Vaishnaw, Prof. Manjul Bhargava, and officials from NCERT, CBSE, NIC, and the MoHA.

Embedded Systems Engineer Intern,
STEMbotix   May 2025 – June 2025

- Developed a production-ready quadruped robot and an interactive kids' game system.

- Worked with STM32 microcontrollers, SPI protocols, and Battery Management Systems (BMS).

- Focused on embedded firmware design, peripheral interfacing, and system optimization.

PROJECTS

Print&Go – Smart Printing Kiosk   2025
Received ₹2.5L grant under the Government of Gujarat's Student Startup & Innovation Policy (SSIP).

- Designed a 24×7 self-service document-printing vending machine with peer-to-peer encryption, secure file upload, and automated payment/printing workflow.

SegReClaim – Incentive-Based Waste Collection System   2025
Received ₹70k grant under the Government of Gujarat's Student Startup & Innovation Policy (SSIP).

- Built a reverse-vending IoT system that automatically identifies, segregates, and rewards recyclable waste deposits, promoting sustainable disposal practices.

Underwater ROV   2024
Cleared Level I of Robofest and was awarded ₹50,000 funding for continued development.

- Designed and developed a remotely operated underwater vehicle for structural analysis of submerged infrastructure.

- Integrated BLDC motors with a Raspberry Pi for precise maneuverability and real-time control.

Robotic Process Automation   2024
Reached the finals of the Datamatics Hackathon at IIT Bombay

- Developed an **RPA** solution at the **Datamatics Hackathon** to automate repetitive business processes, enhancing efficiency and accuracy.

- Designed and implemented a bot using **Python and Datamatics automation frameworks** to streamline data extraction, processing, and reporting.

- Successfully reached the finals at **IIT Bombay**, showcasing the solution's impact and scalability in real-world applications.

Smart Mirror   2023
Showcased at National Children's Science Congress (NCSC) 2023

- Developed a smart mirror that displays **daily routines**, Google Calendar events, and New York Times news, while also allowing Spotify control and **integration with smart assistants** like Google Assistant or Alexa. Powered by a **Raspberry Pi**, it uses a **two-way film** on the surface, enabling it to function as both a display and a regular mirror, creating an interactive and functional addition to any smart home.

Indian AI Product Finder   2021

- Applied natural language processing (NLP) techniques to analyze customer descriptions.

- Designed the system to recommend local Indian alternatives based on user queries. Utilized a Kaggle-sourced Amazon dataset containing Indian products.

Computer Vision for Waste Segregation using MobileNet Architecture   2025

- Implemented a waste classification system using transfer learning on a pretrained MobileNet model.

- Fine-tuned the network to classify different types of waste materials (e.g., plastic, metal, organic).

ACHIEVEMENTS

- **Top 5 Finalist – Nirman 1.0, PDEU SOM & IIC**   Apr, 2025
  Secured 5th position in a university-level innovation and entrepreneurship competition. Received a cash prize of ₹8000. Project details are confidential due to ongoing development potential.

- **Two Time Finalist - Datamatics Hackathon, IIT Bombay**   Dec, 2024
                                                                             Dec, 2023
  Developed an RPA solution to automate business processes, enhancing efficiency and accuracy.

- **Winner - Round 1, Robofest (Underwater ROV Category)**   Aug, 2024
  Led a team in designing and prototyping a remotely operated underwater vehicle for structural analysis of submerged infrastructure. Secured ₹50,000 in funding.

- **Top 15 (Regional) - NASA Space Apps Challenge**   Oct, 2023
  Competed in high-level hackathons, showcasing innovative problem-solving and technical expertise.

CO-CURRICULAR EXPERIENCE

- **Cretus Robotics Club - Technical Lead**
  Engaged in hands-on robotics workshops, hackathons, and technical competitions, expanding expertise in embedded systems, automation, and AI.

- **Intel AI Bootcamp - Participant**
  Developed an AI-based Indian product finder for Amazon, leveraging machine learning techniques to enhance search optimization.

- **Atal Tinkering Lab - Mentor & Workshop Conductor**
  Supervised and organized STEM workshops for students, promoting innovation in robotics and IoT.

CERTIFICATIONS & LEARNING

- **IBM SkillsBuild: Building AI Solutions Using Advanced Algorithms and Open Source Frameworks**   2025
  Learned to build AI models using advanced machine learning algorithms and open-source frameworks like and scikit-learn.

- **Harvard CS50: Introduction To AI**   2024
  Covers fundamental AI concepts, machine learning, and neural networks

- **Intel AI Bootcamp**   2021
  Focused on NLP, trained an AI-based Indian product finder using Amazon product datasets.