

Arpit Raj

Bachelor of Technology
Electronics & Communications Engineering
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Education

Degree/Certificate	Institute/Board	Year
B.Sc Data Science and Applications	Indian Institute of Technology	2025–Present
B.Tech ECE	Shri Mata Vaishno Devi University	2024–Present

Experience & Leadership

- Project Leader, C Programming** 2024, *Group Project*
Spearheaded a group project demonstrating C programming applications, managing team coordination and technical presentations.
- Team Leader, PCB Design** 2025, *College Workshop*
Directed a team in designing and manufacturing a Printed Circuit Board (PCB) using Eagle software.
- University Representative** 2025, *JKEDI Event*
Represented SMVDU at a JKEDI-organized program, showcasing university innovation and leadership.
- College Fest Live Streaming** 2025, *Streaming*
Volunteered for the live streaming of events using OBS software, managing camera feeds and stream quality.
- World Book Fair Volunteering** 2026, *Volunteering*
Worked in New Delhi world book fair 2026.
- IIT Guwahati winter consulting course** 2025, *Course*
completed my consulting course from IIT Guwahati

Projects

- BJT-Based Wireless AC Current Detector** 2024, *Hardware Design*
Engineered a circuit utilizing Bipolar Junction Transistors (BJT) to wirelessly detect the presence of an AC current source.
- AI Chatbot Platform** 2026
React, Node.js, Express.js, MongoDB, Socket.io, Gemini API Full-stack conversational AI with real-time messaging via Socket.io, JWT authentication, and integration with Google Gemini and HuggingFace models.
- Virtual Air Drawing** 2026
Python, OpenCV, MediaPipe Touchless gesture-based drawing interface achieving 25+ FPS using hand tracking — designed for accessibility and educational use.
- Capstone Project for Winter Consulting IITG** 2025, *Problem Statement*
Viewer Retention in OTT Platforms: Diagnosing Engagement Patterns.
- 8-bit ALU Design** 2025
Designed 8-bit ALU using verilog to perform different logical and arithmetic operations.
- Driver Drowsiness Detection System** 2026
Python, OpenCV, MediaPipe Real-time safety system using facial landmark detection and Eye Aspect Ratio (EAR) analysis to monitor drowsiness and trigger alerts.
- Real-Time Hardware Image Processor**
Developed a high-speed video pipeline on the PYNQ-Z2 to perform real-time image filtering and edge detection using custom Verilog hardware cores.

Technical Skills

Programming	C, Python, HTML, SQL, MATLAB, Simulink, Verilog
Web Dev	HTML, CSS
Hardware	PCB Fabrication (Eagle), Arduino uno, Raspberry Pi, ESP-32, PYNQ-Z2 FPGA Board
Software	Canva, Photoshop, AutoCAD, Fusion 360, vivado, multisim, Eagle, Docker, Nginx, WireGuard, VPS Administration (DigitalOcean, Oracle).
Tools	AWS, Google Workspace, Microsoft Workspace, OBS (Video/Stream Editing)

Soft Skills & Extra-curricular

Leadership	PR management in Aakash house of SMVDU, Lead C programming head, Lead Team of Printed Circuit Board Competition, Udyamitsav 2026 winner Finxcelerate.
Volunteering	NSS at SMVDU, Vikalp (A student initiative to educate unprivileged kids), Ekatva Fest team 2025 and 2026, Udyamitsav 2026 IIT Jammu
Skills	Communication & Collaboration, Event Management, book fair

Leadership & Volunteering

Technical	Team Leader for PCB Design Workshop; Project Leader for C Programming applications.
Events	Core Member, Startup and Innovation Club (SMVDU); PR Manager & Organizer for Ekatva Fest (2025–2026); Core Member, Tarang Electronics Society; University Representative at JKEDI innovation program; Lead OBS live-streamer for university events.
2024–Present	Volunteer Teacher, Vikalp Initiative, SMVDU Provide free, consistent after-school tutoring in foundational subjects to underprivileged children from neighboring villages. Focus on bridging educational gaps, developing interactive lesson plans, and serving as a long-term mentor to foster a positive learning environment.
2024–Present	Core Contributor, Annapurna Initiative, SMVDU Organize and execute the systematic collection of surplus, hygienic food from university mess facilities. Manage the direct distribution of these meals to local daily-wage labor workers, actively working to minimize campus food waste while supporting vulnerable local populations.
2024–Present	Active Volunteer, National Service Scheme (NSS), SMVDU Participate in university-led community outreach programs, health and hygiene awareness campaigns, and campus betterment drives. Collaborate with peers to organize events that promote social responsibility, civic engagement, and community welfare.

Certifications

Deloitte Australia - Technology Job Simulation <i>Forage</i>	2025
VLSI Design Course <i>Internshala</i>	2025
J.P. Morgan - Software Engineering Job Simulation <i>Forage</i>	2025
MATLAB Onramp <i>MathWorks</i>	2025-26
Simulink Onramp <i>MathWork</i>	2025-26
Consulting <i>IIT Guwahati</i>	2026