Anjali Verma

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Personal Profile

I offer a special combination of technical know-how and real-world experience as an Electronics and Communication Engineer with experience designing embedded systems and a Master's in Communication and Signal Processing. I developed and optimized embedded systems as an embedded designer, where I first started my career. I was particularly interested in establishing hardware-software solutions that were dependable and efficient. I am passionate about advancing in the field of embedded systems, with a particular interest in leveraging my expertise in communication and signal processing. My goal is to contribute to developing cutting-edge technologies that drive innovation in the embedded and communication sectors, while continuously expanding my technical knowledge and leadership skills.

Education

Indian Institute of Information Technology Guwahati   *Guwahati, India*
Mtech in Communication and Signal Processing Engineering   *August 2022 - June 2024*
- **Grade: 7.70**
- **Courses:** Wireless Communication, Dynamics Learning, Security and Network System, Machine Learning, Linear Algebra, Statistics, and Random Process, Advanced Digital Signal Processing, Advanced Digital Communication, Antenna Theory and Design, System on chip with IoT Application, Machine Learning, Applied Optimization.

Shri Shankaracharya College of Engineering   *Bhilai, India*
B.E. in Electronics and Telecommunication Engineering   *August 2014 - June 2018*
- **Grade: 7.7**

Work Experience

Innovation4u   *Bhilai, India*
Embedded Designer   *Dec 2018 - Jan 2020*
- **Automatic surveillance security camera:** Surveillance technology is used to monitor individuals' digital and physical actions and communications. Common forms include data-gathering apps on smartphones, and facial recognition software in smart security camera systems.
- **Anti-theft vehicle security:** An anti-theft device aims to prevent thieves from stealing your car, or to help locate and retrieve it if a theft does occur. **Software Requirement:** Embedded c or Assembly, MP Lab and CCS C Compiler
- **Solar Panels using Aurdino:** We measure the intensity of light with LDRs using Arduino and compare the intensity of light falling on both LDRs. We need a servo library to control the motion of the servo.
- **Soft Skills:** Time Management, Communication, Presentation skills.

Dr. Shyama Prasad Mukherjee International Institute of Information Technology, Naya Raipur   *Raipur, India*
Research Intern   *May 2023 - July 2023*
- **ProjectTitle:** AI/ML-powered network management and signal processing for base stations in 5G and beyond.
  For two months, I worked as a research intern on this project, my task was to monitor the strength transmitted and received signal generated through USRP Omni directional antennas mounted over USRP and Intelligent Reflecting Surface between transmitter and receiver.

Indian Institute of Information Technology Hyderabad   *Hyderabad, India*
Research Intern   *Jan 2024 - April 2024*
- **ProjectTitle:** 5G Reference Signal, for downlink estimation Channel State Information Reference Signal(CSI-RS) .
  For four months, I worked as a research intern, where I studied Channel State Information and Channel State Information Reference Signal difference and the application area in LTE and NR. I also looked at the signal generation part with the help of dedicated software.

University Projects

Clustering-classification approach for human activity detection using smartphone dataset   *Guwahati, India*
Indian Institute of Information Technology Guwahati   *Feb 2023 - Current*
- Individual Project of ML in the supervision of professor.
- HAR Dataset from UCI dataset storehouse is utilized. This dataset is collected from 30 persons, performing different activities with a smartphone to their waists.
- This project is defined by classification and clustering approach.
- **Technical Skills:** Python(Pandas, Numpy, Scikit learn), PyCharm, Google Colab, LaTeX(Overleaf)
- **Soft Skills:** Leadership, Presentation skills, Report writing.

Voice Typing Braille Pad System   *Bhilai, India*

Shri Shankaracharya College Of Engineering   *Feb 2018 - Apr 2018*

- Collaboration with a three-person team to develop a voice typing braille pad system.
- **Methodology:** Software Framework, Free Android Application, Actuators.
- This project explains the idea of messaging system for visually impaired people. This vital technology tool and its application in the area of telecommunication have significant and widespread.
- **Technical Skills:** MS PowerPoint.
- **Soft Skills:** Leadership, Teamwork, Presentation skills, Report writing.

Vehicle tracking system   *Bhilai, India*

Shri Shankaracharya College Of Engineering   *Nov 2017 - Dec 2017*

- This project is presented individually.
- The project is designed for using surveillance camera on a panning platform i.e. moving the camera, mounted on a DC motor in clockwise and anticlockwise direction in periodic intervals.
- **Requirements:** 1.Power supply, 2.PCB layout of Automobile Surveillance Camera, 3.Microcontroller ATMEGA328, 4.LCD display, 5.Infrared sensor, 6.Photo diode, 7.Survey Motor, 8.Webcam, 9.LED, 10.Resistors, 11.Capacitors, 12.Voltage Regulator, 13.Transformer, 14.Potentiometer, 15.Connecting Wires
- **Soft Skills:** Presentation skills, Communication Skill, Logical Thinking.

Skills

Programming	Python (Pandas, PyTorch, NumPy, Scikit-learn. etc.), Matlab, C.
Technical Skills	Knowledge of Microcontrollers, Microprocessors, Real-time Operating Systems, Digital electronics, Basics knowledge of CMOS, Basics of HDL
Miscellaneous	Windows, LaTeX(Overleaf/R Markdown), Microsoft Office, PowerPoint, Github.
Soft Skills	Time Management, Teamwork, Problem-solving, Documentation, Engaging Presentation, Communication.

Others

- **Research in Progress-**
- **Deep Reinforcement Learning based mobile edge computing:** Current research topic discussion- here I used Reinforcement learning techniques to optimize computing operations at mobile network edges. These techniques were designed and implemented as part of this endeavor to improve the efficiency and decision-making capabilities of mobile edge computing systems. The project not only displayed my expertise in cutting-edge technologies but also my capacity to create in the dynamic field of mobile computing.
- **Intelligent reflecting surfaces with mobile communication:** This technology improves the performance of wireless communication networks. The IRS-aided hybrid wireless network helps in achieving sustainable capacity growth cost-effectively in the future.
  Intelligent reflecting surfaces with mobile communication using this technology check the reduction of malicious signals via IRS and increase the SNR for a malicious user.
- **Physical layer Security:** Researching approaches for boosting wireless communication security at the physical layer. centered on taking advantage of the fading and noise that are natural to wireless channels to protect data transmission from illegal access and eavesdropping.

Languages

English	Professional proficiency
Hindi	Native proficiency