

Anabil Roy

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EDUCATION

Heritage Institute Of Technology, Makaut <i>B.Tech in Electronics Communication and Engineering</i>	7.87/10 <i>Dec 2021 - July 2025</i>
Pearls of God <i>CISCE - Class-XII</i>	86.5%/100 <i>Apr 2020 - May 2021</i>
Pearls of God <i>CISCE - Class-X</i>	94.4%/100 <i>Apr 2018 - May 2019</i>

PROJECTS

- 1)Explainable AI for Image Segmentation(in continuation) | Python, OpenCV** Jan 2024 - continuing
 - Analyzed models of SISE, ADASISE, LIME, and RISE improving model interpretability .
 - Enhanced segmentation accuracy using advanced Explainable AI techniques.
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- 2)PAPR Reduction through modified exponential and partial select mapping. |matlab**
 - Studied Index Modulation of OFDM and implementation of basic ofdm block.
 - Reduced Peak-to-Average Power Ratio (PAPR) through techniques like exponential companding and partial select mapping.(adjacent psr ,random psr and interleaving psr)
 - Did a comparative study among the techniques like Hadamard transform>windowing and analyzed the respective papr reduction of the following techniques.
- 3)IoT Health Monitoring System | Arduino, Raspberry Pi, Python, Matplotlib**
Guided by:prof p venkateshwaran(JU ETCE)
 - Engineered an IoT-based system for real-time patient health monitoring increasing accuracy of vital data collection
 - Integrated sensors using Arduino and Raspberry Pi enabling continuous monitoring for 24/7 of the patient
 - Implemented data transmission and storage using MQTT protocol .
 - Architected the system structure .
 - Embedded ai features in the system
- 4)Reversible logic gates designing for quantum cost reduction | Verilog ,Ltspace**
 - designed circuits like full adder,ripple carry adder ,carry save adder,carry select adder using peres ,tofolli and feynman gates.
 - achieved lesser quantum cost
 - implemented the structure in a manner such that propagation delay is reduced.
- 5)underground cablewire fault detection | Arduino uno ,Hardware designing**
 - developed and implemented the device with voltage difference sensing mechanism.
 - The prototype aims to reduce detection time and costing to a huge extent .
 - enhancement of the network reliability compared with conventional methods. -

PROJECTS

Summer Intern Under Guidance of Prof.Vivek Dixit

Oct 2023 – Dec 2023

IIT Kharagpur

- * Modeled and optimized Terahertz Schottky Diode, improving parameter efficiency and extractingS-parameters using ADS through the smith chart.
- * Designed SiC MOSFET, enhancing power efficiency for high-performance applications
- * Developed a crystalline selenium-based stacked CMOS image sensor, achieving a increase in photon counting
- * Created 3D models of DG MOSFET, HEMT, and TFET, reducing body effect and DIBL using silvaco.
- * Constructed an Optical Modulator improving modulation depth.

Publications

Homecare robotics system wearable remote sensing with interacting AI features

The given publication was accepted at IEEE APSCON held at BITS Pilani,Goa campus.

TECHNICAL SKILLS

Languages: Python, C++, C

Frameworks/Libraries: WordPress, Pandas, NumPy, Scikit-learn, Matplotlib

Developer Tools: Git, GitHub, Visual Studio Code, Matlab, Arduino, Cadence, ADS

Relevant Coursework: Data Structures & Algorithms, DBMS, TCP Protocols, Object Oriented Programming, Database Management System, Artificial Intelligence and Machine Learning