Harsh Tomar

Pre-Final Year | Artificial Intelligence & Data Science | IIT Jodhpur
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EDUCATION

IIT JODHPUR
BTech in Artificial Intelligence & Data Science
2021 - 2025 | Jodhpur, India
CGPA: 8.2 / 10 (up to 4th semester)

C.B.S.E Board | Class 12^{th}
Grad. July 2020 | Ahmedabad, India
Percentage: 93%

C.B.S.E Board | Class 10^{th}
Grad. March 2018 | Ahmedabad, India
Percentage: 95.6%

LINKS

Github gojousatoru007
LinkedIn Harsh Tomar

SKILLS

LANGUAGES & FRAMEWORKS
• C/C++ • Python
• Assembly Language Programming
• SQL • PHP • API • Bash • VHDL

MACHINE LEARNING & AI
• TensorFlow & PyTorch •NetworkX
•Neural Networks •Scikit-Learn
•Geometric Deep Learning

OTHERS
• Arch Linux & Ubuntu • Virtualization
• Docker • Apache • MongoDB • MySQL
• Multi-Threaded Servers •MATLAB
•Creative Writing

COURSEWORK

UNDERGRADUATE
•Data Structures & Algorithm
•Pattern Recognition & Machine Learning
•Probability, Statistics & Stochastic Processes
•Principles of Computing Systems
•Engineering Mathematics

ACHIEVEMENTS

•Silver Medal in Math Olympiad (2019)
•Ranked within the top 4% from a pool of 0.25 Million candidates in JEE Adv. 2022

EXTRACURRICULAR

•Worked on Face Recognition Project at Inter-IIT TechFest (2022) hosted by IIT Kanpur

WORK EXPERIENCE

DESIGN PROJECT | Cyber Security Using ML| Dr. Ravi Yadav
April 2022 - September 2022| IIT Jodhpur

- Developed and implemented robust **machine learning models** to accurately predict and prevent adversarial attacks on networks, enhancing overall **network security**.
- Led the end-to-end Full-Stack development of a **Web3** decentralized web application, leveraging **blockchain technology** and **smart contracts**.
- Designed and implemented the architecture, ensuring **scalability**, **security**, and **user-friendliness** of the decentralized web application.

RESEARCH WORK

GRAPH NEURAL NETWORKS | Dr. Dip Sankar Banerjee
December 2022 - Current | IIT Jodhpur

- Conducting in-depth research on **Graph Neural Networks** and gained expertise in various **graph architectures**, including **GraphSage and Graph Attention Networks**.
- Exploring and analyzing the application of GNNs in diverse datasets, such as **biomolecules**, **social networks**, **citation networks**, **recommender systems**, and **knowledge graphs**.
- Conducting comprehensive **performance evaluations** of GNNs on multiple datasets, assessing their effectiveness in tasks such as **node classification**, **link prediction**, or **graph generation**.

PROJECTS

CREDIT RISK ANALYSIS
Machine Learning, Neural Networks, Sampling

- Worked on detecting fraudulent credit card transactions from naturally **high-unbalance data**.
- Given that the fraudulent transactions constituted only **0.172%** of all transactions, various **Sampling Methods** and **Learning Models** were applied.
- Achieved **98.8% Accuracy**.

DETECTION OF PARKINSON'S DISEASE
Machine Learning, PreProcessing, Neural Networks

- Worked on detecting Parkinson's Disease from Dataset based on **Vocal Features and Voice Recordings** of patients for diagnosis.
- Achieved **87% Accuracy** in successfully detecting the disease.

VIRTUALIZATION IN LINUX
PHP, Python, C, Apache, Servers, PostgreSQL, MongoDB

- Running Multiple **Virtual Machines** in Arch Linux & Ubuntu with different Network Properties.
- Set up **MultiThreaded** Servers and **Web Applications** that interact with the **database**.

NETWORKING: SERVERS
Python, C, TCP/UDP, Networking Protocols, HTTPS, Backend

- Understanding **Networking Protocols** and setting up **UDP/TCP Sockets** that communicate between different machines on the network.
- Further set up **multithreaded servers** that serve **multiple clients** at the same time using **Socket Programming**.