UTKARSH MATHUR

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EDUCATION

Indian Institute of Technology, Roorkee **July 2018 – July 2022**

B.Tech. Polymer Science and Engineering

Course: Design & Analysis of Algorithms, Artificial Neural Networks, Mathematical Statistics, Computer Programming & Numerical Analysis, Mathematics (Calculus, Matrix Algebra), Mathematical Methods (ODE, PDE, Laplace, Z, and Fourier Transform)

Societies & Activities: Student Mentorship Program (Student Mentor), Team Inclusion (Member), Placement and Internship Cell (Company Associate), TED x IIT Roorkee (Manager), National Cadet Cell (Prahari Kaksh), Cognizance (Core Team Member), Music Section (Vocalist)

KNOWLEDGE & SKILLS

Professional Courses: Deep Learning Specialization (Coursera), Machine Learning A-Z (Udemy), Deep Learning A-Z (Udemy), Artificial Intelligence Nanodegree (Udacity), Sports Analytics Using Python (Mad About Sports), Data Science using Python (EICT IIT Roorkee), Mastering Data Structures & Algorithms using C and C++ (Udemy)

Programming Languages: Python, R, Rust, C++, Java, Perl, SQL, MATLAB

ACHIEVEMENTS

- Secured All India Rank 6902 in JEE Advanced 2018 (out of more than 150,000 students) post selection from JEE Mains 2018 by securing All India Rank 9040 (out of more than 1,200,000 students).
- Secured 10th Rank in Rajasthan State Talent Search Examination (STSE) 2015.

EXPERIENCE

ML Engineering Intern | HONO **July 2021 – Present**

- Working on building Predictive Analysis models of several kinds of HR-related datasets.
- Main responsibility is to create automated ML pipelines in Python after performing data preprocessing and analysis.

Data Science Intern | Imago AI **April 2021 – May 2021**

- Worked on implementation of ML algorithms on Hyperspectral Image data to produce optimum ML models which was the basic building block for some of the most used products of the organization.
- Built Machine Learning pipelines using Python and its libraries to implement various classification and regression algorithms.
- Built 5 Machine Learning pipelines that are used as the source to produce and refine products.

PROJECTS

Feature Selection with GWO | Research Project (IIT Roorkee)

- Ongoing project in collaboration with Ms. Preeti, PhD student of Dr. Kusum Deep, Professor, Department of Mathematics, IIT Roorkee.
- This project aims to optimize feature selection process by inclusion of Random Walk Grey Wolf Optimization (RW-GWO).

Semantic Segmentations of Ocular Images | Research Project (IIT Roorkee)

- Completed a project under Dr. Mayank Goswami, Assistant Professor, Department of Physics, IIT Roorkee.
- Build several renditions of U-Net models to perform semantic segmentation over tumor-infected ocular images of rats.

Breast Cancer Classification | Course Project (IEE 03 Artificial Neural Networks)

- The main objective is to compare these three models - Support Vector Machine (SVM), Artificial Neural Network (ANN) (with Particle Swarm Optimizer), and Artificial Neural Network (ANN) (with Gradient Descent) over Breast Cancer Classification.
- Conclusion was SVM perform a better classification task than ANN models on dataset with fewer training examples (512 examples).

Production of Sustainable Aviation Fuel | B.Tech. Project (IIT, Roorkee)

- It is project assigned to a group of 5 students under the aegis of Dr. PK Jha, Associate Professor, Chemical Department, IIT Roorkee.
- The aim of the project is to design a production plant that optimizes the production of Sustainable Aviation Fuel in India.

Motion of Liquid Droplet on Inclined Super-hydrophobic Surfaces | Research Project (IIT Roorkee)

- Completed a project under Dr. Gaurav Manik, Associate Professor, Department of Polymer and Packaging, IIT Roorkee.
- Scripted a library extension for Forcite module of Material Studio to calculate the contact angle and motion of a liquid droplet on an inclined surface coated with super-hydrophobic polymers.

GitHub Repositories | Data Science Practice

- Facial Expression Recognition – Collaborated with a fellow collegemate and compared Deep Learning Computer Vision algorithms on FER-2013 dataset post Data Augmentation to balance imbalanced dataset.
- CIFAR-10 & Digit Recognizer – Practices several Deep Learning Computer Vision algorithms over CIFAR-10 and MNSIT dataset.
- Melbourne Housing Prices & Titanic – Practiced classical Machine Learning algorithms over Melbourne Housing & Titanic Datasets.