SAMARTHYA GOYAL

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Objective

Dynamic and detail-oriented Civil-Structural Engineering post-graduate with a strong foundation in engineering principles, passion for Data Science and Machine Learning. Seeking to leverage analytical skills, problem-solving abilities along with technical expertise to contribute towards innovative data-driven solutions for a progressive company. Eager to apply engineering insights to develop robust data applications and enhance decision-making processes.

Education

IIT Bhubaneswar, Dual Degree, Civil & Structural Engineering - Current CGPA - 8.67/10

Key Accomplishments

- Published two chapters in the book "Eco-Friendly Supercapacitors" (ACS Publication) & "Fracture Behavior of Nanocomposites and Reinforced Laminated Structures" (Springer Publication)
- Applied for a patent through Company Confidential for "An Artificial Intelligence Assisted Predictive and Strategic Diagnosis Power Center for Battery Operated Electric Vehicles", currently pending review by patent lawyers.
- Achieved 1st place in both the Astronomy Competitions and ML Hackathon at IIT Bhubaneswar
- Successfully served as Student Placement Coordinator for the 2024-2025 batch, facilitating job placements and career opportunities for students.

Skills

- **Core Skills:** Designing reinforced concrete/steel structures, roads safety, structural health monitoring & rehabilitation.
- **Languages:** Python (Numpy, Pandas, Matplotlib, Scikitlearn), HTML, CSS, JavaScript, ReactJS, MongoDB, SQL.
- **Software:** PyroSim, Tableau, AutoCAD, Fusion360, SolidWorks, Ultimaker Cura.
- **Interpersonal Skills:** Collaborative Problem solving, Team responsibility, Effective organizational communication.

Internship

HyScalar Technologies Pvt. Ltd. **05/2024 - Present**

Researched and developed patents for AI-assisted diagnostics in electric vehicles and quantum computer setups with graphene qubits, conducting literature reviews and deriving analytical results to support filings.

ElectroGati Technologies Pvt Ltd **05/2024 - 07/2024 * 05/2023 - 07/2023**

#1 Achieved 95% accuracy in predicting battery cycle life by developing a new dataset with MATLAB and Excel, focusing on voltage-derived features from EV batteries without using experimental features.
#2 Enhanced model accuracy from 90% to 95% by developing and training Elastic Net and Linear Regression models on derivable and experimental features to improve battery performance.

In-Time Tec, Jaipur, India **05/2023 - 07/2023**

Developed a data analysis webpage using Python Flask API, MongoDB, ReactJS, Express, and various APIs.

New York University, Tandon School of Engineering **05/2022 - 07/2022**

Completed two research projects under Prof. Nikhil Gupta at NYU as part of the USA-India IREU Program for Cybersecurity in Additive Manufacturing:

- Project #1: Developed a design infringement detection system for STL files.
- Project #2: Implemented encryption techniques to protect 3-D CAD files from malicious attacks.

Academic Projects

Research Project #1: Optimization of Battery Cycle and Battery Life Prediction

Developed a predictive model using Elastic Net Regression and Neural Networks to forecast battery cycle life and identify key influencing factors. Enhanced model accuracy through hyper-parameter tuning and testing on various battery cells.

Project #2: Agricultural Plant Disease Classifier

Implemented a CNN model to analyze plant leaf images and predict diseases with 96% accuracy. Developed a Streamlit application for plant disease detection, enabling users to upload images and receive disease predictions.

Project #3: Text Summarizer using Google Pegasus LLM Model

Developed a text summarizer application using advanced NLP techniques for accurate and relevant summarization. Optimized and fine-tuned the model to ensure high-quality, coherent summaries suitable for practical use.

Master's Thesis Project

Project: Advanced Fire Spread Prediction and Thermal Profiling Using GANs and Simulation Data

Developed 3D AutoCAD models and used PyroSim for fire spread simulation, implementing a GAN model for future fire prediction. Generated thermal profiles from video frames to enhance fire safety and structural assessment.

Certifications

Machine Learning A-Z

Python for Data Science and Machine Learning

The Complete SQL Bootcamp

Deep Learning A-Z

Statistics for Data Science and Business Analysis