Sudarshan kumar Oraon

Entry No.: 2022CH71511
B.Tech and M.Tech in Chemical Engineering
Indian Institute Of Technology, Delhi

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Education

Degree/Certificate	Institute/Board	CGPA/Percentage	Year
B.Tech. Major	Indian Institute of Technology, Delhi	7.04 (Current)	2022 - Present
Senior Secondary	CBSE Board	96.2%	2022
Secondary	CBSE Board	94.8%	2020

Projects

- **Numerical Investigation of Time-Temperature Profile in Microwave Heating Process** *Apr. 2023 - Nov. 2023*
  Prof. Jayati Sarkar (CLL-113) Github
  – Developed a C++ and COMSOL-based model for studying Time-Temperature Profile in Microwave Heating Process, utilizing 4th order Runge-Kutta and simplified assumptions. Analyzed temperature flow, efficiency factors, and gained insights into geometry, material, and field distribution's influence on microwave food heating.

- **Keeper App** *Sept.2023 - Sept. 2023*
  React JS GitHub
  – The Keeper app is a user-friendly tool designed to help you organize and store your notes securely. With its intuitive interface, you can easily create, edit, and categorize your notes, ensuring that important information is always at your fingertips. Whether you're jotting down ideas, making to-do lists, or saving important reminders, Keeper keeps your notes safe and easily accessible across all your devices.

- **Project OCR (Optical character recognition)** *Dec. 2023 - Jan. 2024*
  Winter Break Github
  – Constructed an OCR model using a Gaussian-shaped filter kernel for detecting words in a specific text height range (25-50 pixels). The model's parameters are finely tuned to ensure accurate segmentation of words, accommodating their diverse shapes and sizes. By leveraging this tailored approach, the OCR system achieves heightened precision in recognizing characters within the specified pixel dimensions, enhancing the overall performance.

- **Built an Custom Object Detection Model using TensorFlow and Open CV** *Dec. 2023 - Jan. 2024*
  Winter Break GitHub
  – Developed a bespoke object detection model by combining TensorFlow and OpenCV, emphasizing precision over speed through the deployment of the Faster R-CNN Inception COCO v2 architecture. The model adeptly forecasts the class of detected objects and their associated confidence probabilities within both images and video data, ensuring reliable and accurate results in diverse visual contexts.

Achievements

- **JEE Advanced 2022**, Top 9% among 0.15 million candidates appearing for the test nation-wide. *2022*
- **JEE Mains 2022**, Top 2.5% among 1.2 million students nation-wide. *2022*

Skills

- **Programming Languages**: C/C++, Matlab, Python, Jupyter Notebook, HTML, CSS, JavaScipt, PostgreSQL.
- **Skills**: Data Structures and Algorithms, React JS, Node Js, MongoDB, Rest API, Neural Networking, Deep Learning Fundamentals with Tensor flow, Supervised Machine, Reinforcement Learning, Unsupervised Learning.
- **Tools/Frameworks**: Keras, Tensorflow, Numpy, Matplotlib, XGBoost, SQL, Pandas, Scikit-Learn, Bootstrap, Git & Github, Autodesk Inventor, LaTeX, Postman API Platform, NPM Modules, Microsoft Word, Microsoft Excel.
- **Operating System**: MacOs, Windows, Linux(Ubuntu).

Key courses taken

- **Mathematics**: Calculus (MTL-100), Linear Algebra & Differential Equations (MTL-101), Discrete Maths(COL-202).
- **Core Courses**: Numerical methods in Chemical Engineering, (CLL-113), Transport Phenomena (CLL-110), Material and Energy Balances (CLL-111), Chemistry at Interfaces (CML-103), Intro. to Chemistry(CML-101).
- **Fundamentals**: Introduction to Computer Science (COL-100), Introduction to Electrical Engineering (ELL-100), Electromagnetism and Quantum Mechanics (PYL-101), Introduction to Engineering Mechanics (APL-100).
- **Machine Learning (Stanford Online)**: Supervised Machine Learning: Regression and Classification, Advanced Learning Algorithms(Neural Networking), Unsupervised Learning, Recommenders and Reinforcement Learning.

Positions of Responsibility

- **Activity Head**, Rendezvous 2022, IIT Delhi *March 2022 - April 2022*
- **Activity Head**, Rendezvous 2023, IIT Delhi *Sept. 2023 - Sept 2023*