Sanyam Garg

Roll No.: 2022448
Bachelor of Technology
Indraprastha Institute of Information Technology Delhi

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GitHub Profile
LinkedIn Profile

Education

•Bachelor of Technology in Computer Science *2022-26*
Indraprastha Institute of Information Technology Delhi CGPA: 7.6

Work Experience

•Web Developer Intern - Indian Institute of Technology (IIT) Ropar *Dec'24 - Present*
React.js, Node.js, Express.js, Tailwind CSS, Bootstrap **Github**

- Designed and developed a website for the Center for Micro and Nano Fabrication and the Central Research Facility.
- Implemented an **admin panel** enabling dynamic updates to website content without altering the code.
- Integrated secure APIs to manage publications, bookings, and facility details, ensuring secure authentication with **bcrypt** and **JWT**.
- Streamlined file uploads and storage using **Multer** for research publications and facility details.
- Enhanced **performance** and **scalability** by implementing efficient database queries and **caching mechanisms (with Redis)**, reducing load times and improving user experience.

•Research Intern - Translational Biology Lab, IIIT Delhi *July'24 - Dec'24*
Python, Scikit-learn, Pandas, Molecular Descriptors

- Created machine learning models to predict bioactivity of natural compounds based on structural similarity to FDA-approved drugs.
- Engineered machine learning pipeline utilizing Random Forest, SelectKBest and Support Vector Machine (SVM) algorithms to predict shared protein targets with 95.4% accuracy, informing downstream drug development efforts.
- Evaluated and validated the model's performance using metrics such as AUC and MCC, advancing computational drug discovery.

Personal Projects

• AI pose estimator for exercise and yoga
Computer Vision, Data Visualization, Django, React.js, MySql

- Developed a real-time AI-based pose estimation system to analyze and correct human postures for multiple exercises, including **Surya Namaskar**, squats, and planks.
- Implemented **MediaPipe Pose** and **OpenPose** for 18+ keypoints detection and posture tracking.
- Designed a feedback system using **Deep Learning** models to provide real-time corrections and improve user performance.

• Rule Engine with AST ***GitHub***
PostgreSQL, FastAPI, Abstract Syntax Tree (AST), Docker

- Coded a 3-tier rule engine application using PostgreSQL, FastAPI, and a frontend.
- Implemented an Abstract Syntax Tree (AST) for dynamic rule creation and modification to check user eligibility.
- Deployed using Docker for enhanced scalability and portability.

• Census Income Prediction ***GitHub***
Python, Scikit-learn

- Utilized advanced supervised learning techniques to predict individuals' income with 99% accuracy.
- Implemented Random Forest algorithms with personalized feature engineering for high-accuracy predictions.
- Provided valuable insights to non-profit organizations for prioritizing donation requests based on income predictions.

Technical Skills and Interests

Programming Languages: C/C++, Python, Java, SQL, Bash
Tools and Technologies: Django, FastAPI, Flask, Docker, MySQL, Git, LaTeX, Android Studio, Figma, Scikit-Learn, TensorFlow, Keras
Relevent Coursework: Competitive Programming, Machine Learning, Operating Systems, Analysis and Design of Algorithms, Data Structures & Algorithms, Advanced Programming, Fundamentals of Database Management Systems, Kali Linux, GitHub, PyTorch

Achievements and Awards

- **Qualified JEE Advanced 2022** Achieved by top 2.5% of over 1 million candidates nationwide
- **Specialist on Codeforces** Competitive coder with participation in over 20 contests with a rating of 1431.
- **Global Rank 1391 in Codeforces Round 996 (Div. 2)** Ranked out of 16,000+ global participants
- **Solved 500+ Problems on various Platforms** Demonstrating strong problem-solving and algorithmic skills