MRIDUL JAIN

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PROFESSIONAL EXPERIENCE

European Summer of Code - pgmpy, Remote: Project Intern June 2025 – Present

- Designing and implementing algorithms for Maximal Ancestral Graphs and Partial Ancestral Graphs, enabling more accurate representation of conditional independence in probabilistic models.
- Working on extending DAGs (Directed Acyclic Graphs) to build ADMGs (Acyclic Directed Mixed Graphs) to handle the confounding variable conditions.

Sktime, Remote: Mentee October 2024 – Present

- Engineered Transfer Entropy module based on Pearl's do-calculus to evaluate causal dependencies in time series data.
- Integrated pyspi into sktime's architecture to enhance feature set with time series processing utilities.
- Extended HFTransformersForecaster for dynamic model integration, improving modularity and ease-of-use.

Ernst & Young LLP, Mumbai: Software Engineering Intern June 2024 – July 2024

- Developed financial data APIs using **FastAPI** with **PostgreSQL** backends hosted on **AWS**.
- Automated deployment pipelines using **GitHub Actions**, reducing manual testing overhead and deployment times by 30%.

Genpact, Gurugram: Project Intern September 2023 – November 2023

- Created backend services to interface with **Azure APIs**, automating translation and summarization of financial documents in multiple languages.
- Leveraged **Azure Cognitive Services** and custom NLP models to support over 10 languages for global document access.

PROJECTS

Skin Disease Detection using Deep Learning
Developed a deep learning model using ResNet50 to diagnose skin diseases from images.

- Built a CNN using **ResNet50** with transfer learning for multi-class skin disease classification using TensorFlow.
- Deployed the model as a REST API with **Flask** for real-time predictions on user-uploaded images.

LaceUp - Player Matching and Stats Platform
Engineered a sports matchmaking platform with player performance tracking using time series regression.

- Developed player matchmaking logic and skill tracking using **FastAPI**, **React.js**, and **PostgreSQL**.
- Applied **time series regression** to forecast player performance based on historical gameplay data.

TECHNICAL SKILLS

Languages: Python, R, Rust, C++, SQL
Backend Frameworks: TensorFlow, Node.js, REST APIs, Flask, FastAPI, Django
Frontend: HTML, CSS, JavaScript, React.js
MLOps & Tools: Docker, MLFlow, CI/CD, AWS, Kubernetes

EDUCATION

B.Tech in Information Technology Graduating 2025
Vellore Institute of Technology 8.61 CGPA

Relevant coursework: Machine Learning, Artificial Intelligence, Data Structures and Algorithms, Software Engineering

EXTRACURRICULARS

TAM (The AI & ML Club), VIT: Technical Head 2024 – 2025