Pranav Agarwal

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EDUCATION:

University of California, Irvine (UCI) | Irvine, CA   Sep 2023 - Dec 2024

Master of Data Science | GPA: 3.9

- Machine Learning; Artificial Intelligence; Bayesian Inference; Statistics; Deep learning, mathematics, data analytics

Vellore Institute of Technology, Vellore | Vellore, India   Jul 2017 - Jun 2021

Bachelor of Technology, Computer Science and Engineering | GPA: 9.06

- Data Structures; Database Management; Natural Language Processing; Programming, Computer vision, data mining

SKILLS, CERTIFICATIONS and ACHIEVEMENTS:

- Python; C++; R; SQL; AWS; Docker; Kubernetes; PyTorch; Tensorflow; Spacy; Tableau; LLM; HuggingFace; Langchain; OpenCV; Seaborn; MilvusDB; Neo4J; Seurat; Pandas; Keras; Numpy, spark, Hadoop, hive, mapreduce
- AWS - solutions architect
- Open-source contributor of Mozilla - [github](#).

WORK EXPERIENCE:

Machine Learning Infrastructure intern | **Safran**   Jul 2024 - Present

- Accelerated **equipment health prediction time by 18%** using **Python** and **Spark** by parallelizing real-time aerospace equipment data workloads. Deployed **machine learning** models in **Docker** containers, orchestrated via **Kubernetes** to scale predictions.
- Boosted **equipment reliability to 97%** by applying **reinforcement learning** and **statistical modeling** on **time-series** data, including vibration frequency, intensity, and temperature, using **PyTorch**.

Machine Learning Student Researcher | **UCI AI Center**   Jun 2024 - Present

- Increased **model efficiency by 11%** for **cancer survival prediction** in **Dr. Jana Lipkova's OctoPath lab** by evaluating patch-level and whole-slide models (ResNet50, CONCH, HIPT) using datasets from TCGA, CPTAC and private cohorts with **Python** and **PyTorch**.
- Increased **model accuracy to 94%** using **python** and **pandas** by analyzing **model performance** and generalization to external data delivering insights into the effectiveness of **transfer learning** in **clinical survival prediction**.

Natural Language Student Researcher | **UCI INCHES Lab**   May 2024 – Sep 2024

- **Reduced manual work** of **2 weeks to 1 day** using **Python** and **spaCy** to automatically **parse narrative data** into propositional phrases by engineering a **Large Language model** in the **UCI INCHES Lab** with **Dr. Angela Lukowski**.
- **Enhanced the efficiency to 97%** of analyzing event memory studies by implementing flexible rules to accommodate varied subjects and verbs within the narratives using **spaCy tokens**, ensuring the program's adaptability to different datasets.

Cloud Engineer | **Airbus**   Jul 2021 - Aug 2023

- Facilitated the **migration of 830** departments from on-premises to **AWS cloud infrastructure** using automation scripts deployed on **python** lambda and serverless infrastructure on AWS,
- Reduced monthly **security alerts by 20%** by employing analytical **Bayesian methodologies** using **python** and **splunk** to detect and address potential security threats, ensuring **data integrity**.
- Achieved **annual cost savings of $70,000** by integrating a **recommendation engine** built on **python** utilizing historical usage patterns to optimize menu offerings.
- Engineered a comprehensive **dashboard** via **Amazon QuickSight**, synthesizing user data metrics to furnish actionable insights for informed decision-making, project management and strategic planning.

NLP Software Engineer Intern | **Novartis**   Jan 2021 - Jun 2021

- Cut yearly expenses by **$1 million** by engineering a **chatbot** on **python** via **natural language processing** and **Azure** replacing L1 customer support
- Reduced **customer service response time by 1.7 hours** and achieved **33% surge in chatbot usage** via implementation of a **chatbot analyzer** using **python** and **pandas** capable of identifying areas of low performance and providing insights for enhancement.
- Increased **positive feedback by 23%** by performing **A/B testing** on intents via feedback and incorporated them into language model.

PROJECTS:

Credit Reporting Consumer Complaints Analysis | [github](#) | [medium](#)

- Utilized **Python** with **Pandas** and **Seaborn** to process and visualize data from Equifax, Experian, and TransUnion, identifying key trends in credit score distributions and delinquency rates providing critical insights for strategic **financial** decision-making.
- Developed **predictive models** using **Python** and **NumPy**, applying **regression** analysis and **time series forecasting** to assess policy effectiveness and forecast financial trends, enhancing strategic planning.

Bombay Stock Exchange Equity Analysis | [github](#)

- Engineered a system to track and analyze Bombay Stock Exchange prices using **python**, applying advanced **data analytics** for daily **stock performance** evaluation.
- Utilized **Pandas** for data manipulation, **Matplotlib** for visualization, and integrated **Celery** for automated data retrieval. Employed **Redis** for efficient **data caching** and **real-time updates**.