Aman Ranjan

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LinkedIn | GitHub

Education

BITS Pilani, Hyderabad Campus — Hyderabad, India

B.E. (Hons.) in Computer Science; CGPA: 8.18/10.0 — *Oct 2022 – May 2026*

Technical Skills

Relevant Coursework: Machine Learning, Data Mining, Probability and Statistics, Linear Algebra, Computational Methods for Economics

Languages: Python, R, SQL

Frameworks/Tools: scikit-learn, NumPy, pandas, Matplotlib, Seaborn, Git, Docker, FastAPI, PostgreSQL

Experience

Contenterra Software Pvt. Ltd. — Hyderabad, India

Summer Intern — *May 2024 – Jul 2024*

- Built core modules for a **Personal Search Assistant** integrating file retrieval from **Google Drive**, **Dropbox**, and **Evernote**.
- Developed and deployed a **FastAPI backend** with **OAuth2-based authentication**.
- Set up **CI/CD pipelines** via **GitHub Actions** for feedback loop automation and streamlined development.
- Contributed to infrastructure enabling **future integration of GenAI-based retrieval systems** by designing **modular APIs** and **extensible data schemas**.

Projects

Causal Impact of Mission Indradhanush | *R, Econometrics*

- Investigated **causal effects** of Mission Indradhanush, a **public health campaign** on **household spending behavior**.
- Worked with the noisy, sparse panel data from the **Consumer Pyramid Survey** datasets, a large-scale longitudinal survey data comprising of data related to over **174K+ households** across various districts in India.
- Engineered features to approximate **healthcare expenditure categories**, standardize **consumption variables**, and **align time periods with policy rollout phases**.
- Applied econometric methods like **Differences-in-Differences** and **Propensity Score Matching** to estimate policy impact on **child healthcare** and **discretionary spending**.
- Automated the **end-to-end pipeline** for regression analysis and reproducible reporting using **RMarkdown**.

Predictive Energy Balancing for Smart Grids | *Python, scikit-learn, pandas, FastAPI, matplotlib, Seaborn*

- Built an **ML pipeline** to **forecast solar energy** output and align supply with **smart grid demand**, improving renewable energy utilization.
- Trained and evaluated **time-series models** using **weather and generation data**; achieved **low prediction error** for **multi-day forecasts**.
- Developed a **FastAPI backend** with **visualizations** to serve **real-time predictions** and **consumption insights**.

Popular Dishes Finder from Zomato Dataset | *Python, pandas, association rule mining, Apriori*

- Mined **real-world restaurant data** to extract **high-support** and **high-confidence dish combinations** using **association rule learning**.
- Applied **data cleaning** and **frequent pattern algorithms** to **identify popular food items** across **cities** and **cuisines**.
- Visualized **consumer preferences** and **item set distributions** to **support recommendation strategies**.

Position of Resposibility

Technical Lead, **SWD Nucleus** — Jun 2024 – Jun 2025

- Lead development and maintenance of critical campus-wide digital infra (**Outpass portal** for outstation travel; **SWDPay**, a payment gateway for cashless transactions at campus outlets and fests; **monthly Mess Registrations**) used by **4,000+ students**.