**Dandan Rao**

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**SUMMARY**

Data Scientist with 3+ years of experience in driving AI solutions and ML applications. Expertise in Gen AI techniques, prompt engineering, and MLOps workflow to build scalable models. Ph.D. with 8+ years of research experience in statistical analysis. Proven record of engaging stakeholders and translating technical insights into impactful solutions.

**SKILLS**

* **Programming Languages:** Python, Java, SQL
* **Data Science & Machine Learning:** Pandas, NumPy, scikit-learn, Matplotlib, XGBoost, Random Forest, KNN, TensorFlow, PyTorch, RNN, LSTM, GRU, Transformer, CNN, GANs, VAEs, Gen AI, Machine Learning Solutions
* **AI Frameworks & Libraries:** LLMs, AI Agents, RAG, Hugging Face, LangChain, LangGraph, CrewAI
* **DevOps & Tools:** FastAPI, Git, Docker, CI/CD, Distributed Training, Linux, GCP, Vertex AI, AWS, MLOps
* **Customer & Stakeholder Engagement:** Customer-facing Experience, Stakeholder Management, Fundraising

**EXPERIENCE**

**Techlent Inc. ­­** Pleasanton, CA (Remote)

**Data Scientist** 05/2024 – 12/2024

* Led a team of 3 interns to develop a **recommender system** to support promotion strategies for inventory clearance.
* Analyzed 621,935 sales records, 5,095 product listings, and 265,547 customer profiles through data cleaning, feature extraction, and EDA. Designed and rapidly tested multiple machine learning models within two weeks.
* Presented insights and technical proposals to the company’s executive team, receiving highly positive feedback.
* Achieved **precision@20 of 2.68%,** **24× higher** than before, **doubled sales** and saved at least **$20K** in advertising.

**University of California, Riverside**  Riverside, CA

**AI Engineer** 10/2021 - Present

*Project 3. AI Agent for Research*

* Built an agent to automate literature review, PDF extraction, hypothesis generation, and manuscript refinement.
* Built the system with **LangGraph** and **LangChain**, integrating tools for web search, PDF parsing, and document retrieval. Implemented RAG and advanced prompt engineering for complex research tasks and model evaluation.
* Experienced with **OpenAI** **SDK**, **CrewAI**, and **Qdrant** vector database.

*Project 2. Agricultural Pest Monitoring and Classification*

* Served as lead engineer, developing an **object detection** pipeline to monitor and classify pest species from field camera **images**, supporting sustainable agriculture and effective pest management.
* Trained a **YOLOv5-based detection** model for localization and a **ResNet** **classifier** for species identification on **GCP**, using a balanced and augmented **5 GB** dataset covering 80 pest species.
* Achieved **over 80% IoU** with YOLOv5 and **>80% classification accuracy** across all species.

*Project 1. Environmental Pollutants Detector*

* Served as lead engineer, developing a model to screen thousands of chemicals and identify key pollutants.
* Applied chemistry expertise in feature engineering, resolved overfitting, and improved model applicability by designing a metric to estimate model uncertainty. Rigorously test model performance across chemical categories.
* Delivered a **Neural Network** model with **10×** higher accuracy than domain experts. Built a **Flash** web app, containerized it with [**Docker**](file:///Users/kiluarao/Nutstore%20Files/TEXTBOOK/2.%20Techlent/CV/20250806%20new%20CV/dandanrao/19f_nmr_predictor:latest), and open-sourced the code on [**GitHub**](https://github.com/Dandan-Rao/19F-NMR-Machine-Learning-For-PFAS-Detection). The app helped **reduce test costs by** **80%**.
* Principal investigator on a research **grant** and first author of a **paper**. Won **first prize** in a research competition.

**EDUCATION**

**Tongji University**  Shanghai, China

Ph.D. in Environmental Science and Engineering 09/2016 - 08/2021

Bachelor in Environmental Science and Engineering 09/2012 - 06/2016