Shivani Khandelwal

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EXPERIENCE

The Alan Turing Institute — London, UK
Data Scientist (Data Study Group Challenge) — May 2024 - May 2024

- Worked on problem statement of Kunato company, developing **Trust Index for News Publishers** on article and user level features dataset, implemented **Auto-regressive Models** and clustering approach using **Kmeans** and conducted extensive EDA.
- Collaborated with Master's, PhD, and PostDoc students, engaged in team-based learning, report writing, and presented findings and possible approaches.

Hidalgo Ltd (UKVI) — Coventry, UK
KTP Associate — Mar 2024 - Jun 2024

- Led a collaboration project between Coventry University and Hidalgo Ltd to develop predictive models for forecasting core body temperature across various industries using **Kalman Filter**, improved accuracy by 15%.
- Implemented a **Linear Regression** model for generalizability, developed a dashboard for experiment management and results visualization, and ensured code functionality by test cases using **PyTest**.

Verloop.io — Bangalore, India
Machine Learning Engineer — Oct 2022 - Sep 2023

- Developed interactive chatbots using **NLP** and **Flask**, enhancing customer engagement across diverse business sectors by closely collaborating with clients to understand their needs and incorporating them into the development process.
- Analysed chat interactions to optimize chatbot performance using NLP techniques, including **Sentiment analysis**, and deployed solutions on the **Google Cloud Platform**.

ApplicateAI — Gurgaon, India
Data Scientist — Feb 2022 - Sep 2022

- Built recommendation systems for sales suggestions using statistical models and machine learning regression, incorporating data validation and feature engineering on sales datasets which increased targeted sales and customer engagement.
- Implemented a map feature to recommend similar outlets using **KMeans** clustering and **Geographical Data**.
- Managed version control with **Git** and automated deployment processes using **Jenkins** and **AWS**.

SKILLS

Programming Languages:	Python, R, SQL, Java, JavaScript
Data Science and Machine Learning:	Numpy, Pandas, Matplotlib, Seaborn, Plotly, Scikit-learn, Statistics, Probability, Regression, Classification, Clustering, Reinforcement Learning, Time-Series Analysis
Deep Learning:	ANN, CNN, RNN, LSTM, GAN, TensorFlow, PyTorch
Development and Tools:	Flask, FastAPI, Web Scraping (Selenium, BeautifulSoup, Requests), MySQL, Git, Docker, Jenkins, AWS, Google Cloud
Other Technologies:	LLMs, Computer Vision, NLP, Data Structures & Algorithms, Web development

PROJECTS

Heating and Cooling Systems Controller:

- Developed optimal heating and cooling control systems using **Reinforcement Learning (DDPG)** techniques, achieving a 10.38% average reduction in energy consumption and cost across three buildings while maintaining thermal comfort, compared to a traditional bang-bang controller.
- Created a **data-driven** building's simulation environment using the **REFIT TimeSeries** dataset and applied data processing and feature engineering techniques, including creating lags and temporal features. Compared various machine learning models for temperature and humidity forecasting, optimized hyperparameters with **HyperOpt**, and validated performance using **TimeSeriesSplit** cross-validation. Achieved **98%** accuracy with **Linear Regression** and reduced computational time for faster simulation.

LLM-powered Sourced Q&A App:

- Developed a question-answering application using **LangChain** and **OpenAI GPT-3.5**, combining LLM responses with real-time data retrieval through vector embeddings (Pinecone) and semantic search.
- Integrated **RAG** and optimized LLM prompts to deliver accurate, source-based answers from research papers, and deployed the solution with an interactive UI built on **Streamlit**.

EDUCATION

Coventry University — Coventry, UK
Master's by Research in AI [On a Fully Funded British Council Women in STEM Scholarship] — Sep 2023 - Present
Research Area: Building an optimal controller for smart heating and cooling systems using **Model-based, Data-driven methods and Reinforcement Learning** to reduce energy consumption and cost.

ITM University — Gwalior, India
Bachelor of Technology in Computer Science [Spec. in DS & ML]; **CGPA: 8.32/10.0** — Aug 2018 - June 2022