

KUNAL SACHDEV

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Education

University of Waterloo

Bachelor of Computer Science, Minors in Statistics and Economics

Sep. 2023 – Present

Waterloo, ON

Experience

Edelweiss Life Insurance

GenAI Engineer Intern

May 2025 – August 2025

Mumbai, India

GenAI-powered Business Insights and Visualization

- Enabled real-time conversational access to enterprise AWS Data Lake using a serverless **RAG** application integrated with **Claude 3.5 Sonnet** on AWS **Bedrock**, replacing **200+** static BI dashboards with dynamic insights.
- Engineered **2 Lambda** functions for query processing (input validation, **Redshift** schema extraction, OpenSearch retrieval, prompt assembly, LLM inference) with secure SageMaker/Bedrock access via AWS VPC and PrivateLink, ensuring **99%** API uptime.
- Used **Cohere** embeddings to index text-to-SQL example pairs in **OpenSearch**, retrieving top-5 similarity matches to support few-shot prompting, increasing SQL generation accuracy by **28%**.
- Fine-tuned **CodeLlama-7B-Instruct** using QLoRA and engineered production deployment via SageMaker endpoints leveraging DJL + LMI with **TensorRT-LLM**, resulting in **1.8x** faster inference and **50%** reduced memory footprint.
- Integrated **API Gateway** with a **Streamlit** frontend, returning real-time tables and plots to **3000+** daily active users seamlessly.

Data Science Project – Policy Mis-selling Prediction

- Designed, tuned hyperparameters, and deployed to production a **top-5 LightGBM ensemble** model to predict policy mis-selling with **85.5%** top-2 decile capture.
- Developed the entire ML pipeline to process **4.9M+** policy records on AWS **SageMaker**, containerized it with AWS **ECR**, and automated weekly email dispatch with AWS **Lambda** + **CloudWatch cron** jobs, achieving **3x faster** prediction cycles.
- Operationalized model output by tagging high-risk customers as “Handle with Care” in internal systems, reducing grievance escalation by routing flagged users to trained service specialists in real time.

Info Origin Inc.

Data Science Intern

May 2024 – August 2024

Remote

- Trained and deployed a Named Entity Recognition model using **spaCy**, **Doccano**, and **Streamlit** to parse resumes, cutting candidate screening time for HR workflows by **40%**.
- Tuned hyperparameters for a custom **5-layer** neural network using Google’s NNLM embeddings, PyTorch **TensorDataset** and **DataLoader** for efficient batching/shuffling of **2,200+** articles, achieving **96.4%** accuracy in news classification.

HDFC ERGO General Insurance

Software Developer Intern

April 2022 – June 2022

Mumbai, India

- Automate extraction, cleaning, and storage of insurance quote data from excel to **Oracle** db using a **Python Flask API**, Pandas, NumPy, and **SQLAlchemy**, significantly reducing policy generation time – from 1.5 hours to just 2 minutes (**97.8% faster**).

Projects

Winning the Space Race with Data Science 🚀 | BeautifulSoup, Db2, Matplotlib, Plotly, Scikit-learn

October 2022

- Developed a ML pipeline to predict Falcon 9 first-stage landing success, supporting **\$103M** per-launch cost savings.
- Automated collection and EDA of **90+** launch records with **Db2**, SpaceX API and web-scraping with **BeautifulSoup**.
- Designed web dashboards/maps with **Plotly** and **Folium** visualizing launch success patterns across launch factors.
- Tuned hyperparameters for **Decision Tree** with **GridSearchCV**, achieving **87.5%** cross-validation accuracy.

Car Dealership Full Stack Application 🚗 | Node.js, Express, MongoDB, Flask, Django, React, Kubernetes

March 2025

- Architected a microservices-based car dealership platform with **React** frontend and **Django** + **SQLite** backend.
- Built a containerized backend dealership management service (**Express.js** + **MongoDB** + **Docker**) to serve dealer listings, and customer reviews via **RESTful APIs**.
- Hosted a microservice on **IBM Cloud Code Engine** to analyze customer sentiment and provide business insights.
- Implemented a **CI/CD** pipeline with **GitHub Actions**, and deployed the app stack to **Kubernetes**.

Technical Skills

Languages/Cloud: AWS, IBM Cloud, Python, C, C++, R, SQL, JavaScript, HTML/CSS

Machine Learning: Hugging Face, Pandas, NumPy, Scikit-learn, PyTorch, TensorFlow, Transformers, Jupyter, BeautifulSoup

Web Dev/Databases: React, Node.js, Flask, Django, Dash, SQLAlchemy, MongoDB, MySQL, SQLite, Db2, Oracle

Technologies: Git, Docker, Kubernetes, Linux, bash