KUNAL SACHDEV

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Education

University of Waterloo — Sep. 2023 – Present
Bachelor of Computer Science, Minors in Statistics and Economics — *Waterloo, ON*

Experience

Edelweiss Life Insurance — May 2025 – August 2025
GenAI Engineer Intern — *Mumbai, India*

GenAI-powered Business Insights and Visualization

- Enabled real-time conversational access to enterprise AWS Data Lake with a serverless **RAG** app using **Claude 3.5 Sonnet** on AWS **Bedrock**, replacing **200+** static BI dashboards with dynamic insights.
- Engineered **2 Lambda** functions for query processing with VPC-secured SageMaker/Bedrock access, ensuring **99%** API uptime.
- Boosted SQL generation accuracy by **28%** using **Cohere** embeddings and **OpenSearch**-based retrieval for few-shot prompting.
- Fine-tuned **CodeLlama-7B-Instruct** using QLoRA and deployed it on SageMaker endpoints using **NVIDIA 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. ⚡ — May 2024 – August 2024
Data Science Intern — *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 ⚡ — April 2022 – June 2022
Software Developer Intern — *Mumbai, India*

- Automated 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