KUNAL SACHDEV

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EDUCATION

University of Waterloo — Sep. 2023 – Present
Bachelor of Computer Science, Minors in Statistics and Economics — *Waterloo, ON*
- **Courses**: OOP, Data Structures, Computer Architecture, Statistics, Probability, Linear Algebra, Calculus.

EXPERIENCE

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

GenAI-powered Business Insights with Visualization
- Built a serverless **RAG** app on **AWS Bedrock** (**Claude 3.5 Sonnet**) enabling real-time conversational access to AWS Data Lake, replacing **200+** static BI dashboards and enabling **Rs. 300,000+** in estimated annual operational cost savings.
- Engineered **Lambda** functions for query validation, **Redshift** schema extraction, OpenSearch retrieval, and LLM inference; achieved **99%** API uptime and reduced **8,700+** annual emails per user via automation.
- Boosted SQL generation accuracy by **28%** using **Cohere** embeddings + **OpenSearch** retrieval for **few-shot prompting**. Integrated **API Gateway** + **Streamlit** UI, serving **1.5K+** daily active users with real-time tables/visuals.

Data Science – Policy Grievance & Mis-selling Prediction
- Productionized a **LightGBM** + **CATBoost** ensemble to flag grievance/mis-selling risk across **809K+** policies, surfacing **96.9%** of grievance cases in the top decile, empowering agents to preempt complaints.
- Developed a scalable ML pipeline on AWS **SageMaker**, containerized with **Docker** on AWS **ECR**, and automated weekly predictions with **EventBridge** Scheduler cron job, reducing prediction latency by **66.7%**.
- Operationalized model outputs by tagging high-risk users as "Handle with Care" in internal systems and routing them to trained agents in real time, driving a **23.8% drop** in grievances.

Data Science Intern — May 2024 – August 2024
Info Origin Inc. — *Remote*
- Deployed a custom **spaCy NER** model with Streamlit UI to auto-extract key resume entities, cutting HR candidate screening time by **40%** and streamlining early-stage hiring workflows.
- Optimized hyperparameters for a custom **5-layer** neural network using Google's NNLM embeddings and **PyTorch TensorDataset**/**DataLoader** for efficient batching/shuffling of **2,200+** articles, achieving **96.4%** accuracy in news classification
- Conducted organization-wide technical workshops on Neural Networks, Attention Mechanisms, Transformer, and LLMs.

Software Developer Intern — April 2022 – June 2022
HDFC ERGO General Insurance — *Mumbai, India*
- Automated ingestion of insurance quote data from Excel to **Oracle DB** using **Flask API**, **SQLAlchemy**, **Pandas**, and **NumPy**, cutting processing time by **97.8% (1.5 hours to 2 minutes)**, enabling instant policy generation for underwriters.
- Implemented a 4-factor validation pipeline (file format, encrypted token, template schema, metadata check) to detect obsolete or tampered Excel templates, reducing manual entry errors and rejections by **90%**.
- Designed a redundancy management system using an `isactive` flag for lead IDs, eliminating duplicate entries from reuploads.

PROJECTS

WLP4 Compiler | *C++, Bash, Linux, GNU, GCC, GDB* | ⬤
- Built a compiler for WLP4, a subset of C, implementing Simplified Maximal Munch for **scanning**, LR(1) for **parsing**, context-sensitive analysis, and **MIPS** assembly generation, with **30%** improvement in performance using optimization techniques.

Car Dealership App | *Architecture, Node.js, Express, MongoDB, Flask, Django, React, Kubernetes* | ⬤
- Architected a full-stack microservices app with a **React** frontend, and **3** services: **Django** + **SQLite** backend, reviews REST APIs with **Express.js** + **MongoDB**, and a sentiment analyzer on IBM Cloud; CI/CD with GitHub, & deployment on **Kubernetes**.

Biquadris | *UML Diagram, C++, XWindows, Git, Cygwin, Bash, Linux, GNU, GCC, GDB* | ⬤
- Implemented a two-player Tetris-style game in **C++** using modular **OOP**, applying **Factory** and **Observer** design patterns to support **6+** blocks, **3+** levels, **3** special actions, and real-time text/graphical rendering via XWindows.

Winning the Space Race with Data Science | *BeautifulSoup, Db2, Matplotlib, Plotly, Scikit-learn* | ⬤
- Developed an ML pipeline predicting Falcon 9 landing success with **87.5%** accuracy, using GridSearchCV-tuned **Decision Tree**; automated EDA of **90+** launches via **Db2**, SpaceX API, **BeautifulSoup**, and designed **Plotly/Folium** dashboards.

TECHNICAL SKILLS

Languages/Cloud: AWS, IBM Cloud, Python, C, C++, R, SQL, JavaScript, HTML/CSS, Tailwind CSS
Machine Learning: Hugging Face, Pandas, NumPy, Scikit-learn, PyTorch, TensorFlow, Transformers, Jupyter, BeautifulSoup
Web Dev/Databases: React, Next.js, Express, Node.js, Flask, Django, Dash, SQLAlchemy, MongoDB, MySQL, SQLite, Db2, Oracle
Technologies: Git, Docker, Kubernetes, Linux, bash, GNU, GCC, GDB