

RAGHAV SHARMA

Data Science & AI Researcher, Canada

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PROFESSIONAL SUMMARY

Data Scientist with expertise in Python, SQL, machine learning, and physics-informed ML through interdisciplinary research. I've published four papers on Zenodo introducing theoretical frameworks for transformer architectures and hallucination prevention, drawing from general relativity, special relativity, quantum entanglement, and epistemology, with accompanying open-source implementations for Time Dilation-based uncertainty handling (achieving 70%+ hallucination reduction) and Epistemic Filtering (72.1% accuracy in truth detection). Proven in predictive modeling, statistical analysis, and clear technical communication, regularly contributing to Python in Plain English.

TECHNICAL SKILLS

Languages: Python (NumPy, Pandas, Scikit-learn, Matplotlib, TensorFlow, Keras), SQL

Frameworks & Tools: AWS, Oracle Cloud Infrastructure (OCI), GCP

Machine Learning: Regression, Classification, Clustering, PCA, SVM, Data Mining, Decision Modeling, Feature Engineering

Deep Learning: LLMs (BERT, GPT), NLP (Text Classification, Named Entity Recognition, Sentiment Analysis)

Certifications: Advanced Deep Learning and Computer Vision, Applied Data Science with Python, Deep Learning with TensorFlow & Keras, Machine Learning (Purdue University)

PROFESSIONAL EXPERIENCE

Nebula Sales | Calgary, Canada

Aug 2024 – Present

Data Scientist

- Collaborated with a **B.C. government-approved** contractor to optimize workflows for the **B.C. Energy Savings Program**, significantly increasing grant applications and customer outreach.
- Created a complete **digital workflow** for client data analysis, including **Python** scripts that utilize Google Geolocation API, Places API, and other tools to **automate** and streamline **data processing**.
- Increased **task efficiency by 70%**, resulting in a **3x growth** in customer contracts through targeted, data-driven solutions.
- Built and deployed **predictive models for lead generation** and commission optimization, contributing to a **25% boost in sales conversion rates**.
- Conducted exploratory data analysis (EDA) that led to a **15% improvement in sales strategy** effectiveness and business decision-making.
- Created and deployed interactive **Tableau** and **Matplotlib dashboards**, reducing decision-making time for stakeholders by **40%**.

SecurityScorecard | Calgary, Canada

Oct 2022 – Feb 2024

Software Support Engineer

- **Developed and deployed Python automation scripts**, streamlining manual operational tasks and boosting team efficiency by **70%**. Created log analysis tools that reduced system issue resolution times by **40%**.
- **Identified and addressed critical product bugs** by working closely with QA, engineering, and product teams, improving system reliability and application uptime.

- **Designed and implemented** internal workflows in collaboration with Backend Engineering, SRE, Data Science, and Customer Success teams using **JIRA** and **Confluence**.
- Contributed to system performance **testing**, identifying **bottlenecks**, and supporting **improvements** in application uptime.

Aptos Retail | Calgary, Canada

April 2022 – Oct 2022

Technical Analyst

- Automated recurring **data-cleaning tasks using Python**, saving **15+ hours/week** and enhancing data integrity. Created **complex SQL queries** to extract and analyze key retail performance metrics, enabling data-driven decision-making.
- **Resolved technical tickets** related to retail system performance using **MySQL, Postman, Kibana, and Grafana**.
- Authored internal documentation using **JIRA** and **Confluence** to support technical processes and reduce onboarding time for new team members.
- Performed **root cause analysis** to reduce repeat issues by 30%, maintained SLAs, and contributed to a **95%+ CSAT score** through effective issue resolution.

Concentrix | Winnipeg, Canada

Aug 2020 – April 2022

Supervisor, Technical Support

- Led and mentored a team of 30+ technical support reps, improving productivity and client satisfaction through targeted training. Developed onboarding documentation, knowledge bases, and training guides that reduced ramp-up time by 30%.
- Improved resolution times by **20%** by implementing real-time monitoring (RTA). Collaborated with SSE on escalations, ensuring **90% SLA adherence** and consistently delivering high-quality support to multinational clients.

FREELANCE DATA SCIENCE PROJECTS

End-to-End Loan Default Prediction App

Dec 2024

(Python, TensorFlow, Flask, Streamlit, Docker, Git, CI/CD, AWS, Nginx, Hugging Face)

[View App](#) | Deployed a real-time loan default risk prediction system as a Streamlit app, integrating multiple models (Random Forest, XGBoost). Implemented data preprocessing and feature engineering to improve model accuracy. Used Retrieval-Augmented Generation (RAG) to fetch relevant resources based on user input, which were then passed to GPT to generate clear, human-readable risk explanations. CI/CD enabled via GitHub Actions, with Dockerized deployment on AWS for scalability and reliability. Designed a user-friendly interface for effective risk assessment.

Facial Recognition Using Deep Learning

April 2024

(Python, TensorFlow, OpenCV, Keras, CNN, Computer Vision)

[View Project](#) | Built a CNN-based facial recognition system with advanced preprocessing and model optimization (batch norm, dropout). Developed a real-time detection pipeline using TensorFlow Lite for edge deployment.

Cardiovascular Disease Prediction (Image-Based Data)

Oct 2023

(Python, OpenCV, TensorFlow, Logistic Regression, Random Forest)

[View Project](#) | Predicted cardiovascular risk using medical images. Applied image enhancement and statistical feature selection. Trained and evaluated models for classification accuracy.

Feature Engineering for Real Estate Pricing

July 2023

(Python, Pandas, NumPy, Matplotlib, Seaborn, Dashboarding)

[View Project](#) | Performed EDA and built dashboards to visualize real estate pricing trends. Engineered features to improve model accuracy and pricing strategy insights.

SOFT SKILLS

Teamwork and Collaboration, Communication, Problem-Solving, Critical Thinking, Time Management

EDUCATION

Purdue University, IN, USA

Post Graduate Diploma - AI and ML

University of Manitoba, Winnipeg, Manitoba

Bachelors of Science - Physics and Mathematics

PUBLICATIONS

Sharma, R. (2025). *[Attention as Spacetime Curvature: A General Relativistic Analogy for Language Models]*

Zenodo. <https://doi.org/10.5281/zenodo.15718512>

Sharma, R. (2025). *[Time Dilation for LLM Hallucination Prevention: A Special Relativistic Approach]*

Zenodo. <https://doi.org/10.5281/zenodo.15725659>

Github: <https://github.com/sharmaraghav644/Time-Dilation-Framework>

Sharma, R. (2025). *[An Analogical Framework Inspired by Quantum Entanglement for LLM Hallucination Prevention: A Dual-Network Architecture with Semantic Anti-Correlation]*

Zenodo. <https://doi.org/10.5281/zenodo.15734701>

Sharma, R. (2025). *[Epistemic Filtering For Neural Networks: Verifying Information Before Digestion]*

Zenodo. <https://zenodo.org/records/15811822>

Github: <https://github.com/sharmaraghav644/Epistemic-Filter-Framework>

Regular Contributor: Python in Plain English (Medium)