Rithesh Kumar

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About

Machine learning enthusiast with a solid academic foundation in computer science, specializing in NeuroSymbolic AI, Computer Vision, and Natural Language Processing. Held a senior role as a machine learning decision scientist at Goldman Sachs. Enthusiastic about using the research skills and experience to drive innovation in AI.

Skills

- Generative AI - *Expert*
- Natural Language Processing - *Expert*
- Artificial General Intelligence - *Expert*
- Neuro-Symbolic AI - *Fluent*
- Computer Vision - *Fluent*
- Deep Learning - *Fluent*

Education

Master of Science in Computer Science

University of California, Santa Cruz, Santa Cruz, CA | Expected in May 2025

- Teaching Assistant: Computer Architecture, Ethics and Algorithms, Probability and Statistics.
- 3.85 GPA
- Research Projects: Analysis of Neuro-Symbolic AI for Cognitive, Linguistic, and Philosophical Applications; Academic Video Summarizer and Enhancer using RAG with LLMs.

Bachelor of Technology in Computer Science

National Institute of Technology Karnataka (NITK), Surathkal, India | May 2020

- Ranked in the Top 5% of the class
- Courses: Machine Learning, Computer Vision, Data Mining
- Founding Member of NITK Continue

Work History

Artificial Intelligence Intern

Accretional, San Francisco, CA | June 2024 - August 2024

- Directed the development of Brilliant, an AI tool that automates API generation and deployment, integrating with Google Cloud Functions and AWS Lambda.
- Engineered and enhanced LLM prompts, improving API generation accuracy by 22%, reduced errors by 30%, and sped up the deployment.
- Developed a custom semantic search engine for API retrieval with Retrieval Augmented Generation, which decreased model hallucination by 20%, boosted search relevance, and enhanced user satisfaction in API searches

Senior Machine Learning Decision Scientist

Goldman Sachs, Bangalore, India | August 2020 - July 2023

- Developed time-series SVM models for customer delinquency and risk scoring, reducing delinquency by 6% and improving customer satisfaction by 8%
- Led research on COVID-19's market impact using LSTM-based time series analysis, increasing new customer acquisition by 10%
- Supervised the development of a credit decision pipeline on Provenir, reducing loan processing latency by 15% and maintenance costs by 20%

Machine Learning Research Intern

Sprinklr India, Gurgaon, India | May 2019 - July 2019

- Enhanced sentiment analysis accuracy by 10% via an improved LSTM model for analyzing customer reviews
- Analyzed and implemented model compression techniques for LSTMs, resulting in a 60% reduction in model size while maintaining accuracy

Research Lab

Hyper-resolution of Compressed Whole-Slide Images for Automated Mitotic Figure Counting | Razvan's Lab

- Compressing and hyper-resolution of WSI of Breast Cancer cells using CycleGAN and Sparse NN models.
- Building the model for Mitotic Figure Counting on the compressed images to account for the proliferation of the malignant tumor cells.

Publications

- **Prostate Cancer Grading using Multistage Deep Neural Networks, MIND 2021, Springer:** Developed a novel multi-stage deep learning framework for automated Gleason system grading (GSG) of prostate cancer cells, achieving an overall diagnostic accuracy exceeding 90% f1-score.
- **Network Anomaly Detection using ANNs Optimized with PSO-DE Hybrid, SSCC 2018, Springer:** Proposed a hybrid PSO-DE algorithm to optimize ANNs for network anomaly detection, obtaining an accuracy of 98.7%, a significant improvement over conventional ANN models.