

# Rithesh Kumar

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## SUMMARY

AI enthusiast and MS in Computer Science student at UCSC, focusing on NeuroSymbolic Generative AI and Natural Language Processing. Experienced in developing, deploying, and optimizing models across finance, social media, and healthcare sectors. Passionate about driving innovation through cutting-edge AI research, particularly in research-oriented roles in Machine Learning and Artificial Intelligence.

## EXPERIENCE

### Artificial Intelligence Intern - Accretional

06/2024 - 08/2024, San Francisco, CA

- Spearheaded the development of Brilliant, an AI-driven tool to automate API generation and deployment, integrating directly with Google Cloud Functions and AWS Lambda for real-time deployment.
- Engineered and optimized LLM prompts to improve API generation accuracy, reducing errors and ensuring faster deployment times.
- Built a custom semantic search engine for API retrieval using Retrieval Augmented Generation, reducing model hallucination and improving search relevance across API datasets.

### Decision Scientist - Goldman Sachs

08/2020 - 07/2023, Bangalore, India

- Developed SVM and time-series 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

05/2019 - 07/2019, Gurgaon, India

- Developed an LSTM model for sentiment analysis of customer reviews, improving data quality by reducing errors by 10%.
- Researched model compression for LSTMs, achieving a 60% size reduction with minimal accuracy loss.

## SKILLS

**Areas of Expertise:** Generative AI, Artificial Intelligence, Natural Language Processing, Computer Vision, Reinforcement Learning, Deep Learning, Model Optimization, Image Processing, AI Model Deployment, Machine Learning Model Evaluation, Data Mining and Visualisation, Pattern Recognition.

**Languages:** Python, R, C, C++, Go, PostgreSQL, Javascript.

**Tools:** TensorFlow, Keras, PyTorch, spaCy, Scikit Learn, openCV, Pandas, Numpy, Scipy, MySQL, PostgreSQL, Spark, Git.

## EDUCATION

### Master of Science in Computer Science • University of California Santa Cruz

Santa Cruz, CA • 09/2023 - 05/2025 • 4/4 GPA

- Teaching Assistant for Computer Architecture and Ethics and Algorithms

### Bachelor of Technology in Computer Science • NITK Surathkal

Surathkal, India • 08/2016 - 05/2020 • 9.39/10 GPA

## PUBLICATIONS

### Prostate Cancer Grading using Multistage Deep Neural Networks • [Publication](#)

MIND 2021 • Springer

- Developed a novel multi-stage deep learning framework for automated Gleason system grading (GSG) and grade group (GG) classification of prostate cancer cells, achieving an overall diagnostic accuracy exceeding 90% f1-score.

### Network Anomaly Detection using ANNs Optimised with PSO-DE Hybrid • [Publication](#)

SSCC 2018 • Springer

- Proposed a hybrid PSO-DE algorithm combining Particle Swarm Optimization and Differential Evolution to optimize ANNs for network anomaly detection. Obtained an accuracy of 98.7%, substantially improving the accuracy of conventional ANN-based methods.

## PROJECTS

### Analysis of Neuro-Symbolic AI for Cognitive, Linguistic, and Philosophical Applications

04/2024 - 06/2024

- Conducted a comparative study on Neuro-Symbolic Knowledge Distillation, Commonsense Reasoning, and Cognitive Architecture, identifying commonalities and addressing their shortcomings.
- Proposed a novel architecture combining these fields for Situated Reasoning about norms, intents, and actions, aiming to enhance the linguistic capabilities of current LLM models.

### Whispers of the Heart - Sentiment Analysis of Journal for Therapeutic Assistance • [Project](#)

04/2024 - 05/2024

- Developed a daily journaling app with sentiment analysis capabilities using the Gemini 1.5 Pro multimodal model, designed to provide therapists with daily insights into their patients' emotions.
- Integrated model explainability to articulate the reasoning process behind sentiment analysis, ensuring privacy while offering meaningful emotional insights.

### Academic Video Summarizer and Enhancer using RAG with LLMs • [Project](#)

01/2024 - 03/2024

- Developed an LLM-based pipeline for generating video summaries incorporating external knowledge through Retrieval Augmented Generation, resulting in more comprehensive and accurate summaries.
- Implemented few-shot learning and prompt-based fine-tuning to enhance pre-trained LLM performance, with a 65% user preference over existing summarization methods.

## HOBBIES

Blogging - [Machine Learning series](#)

Writing - [Quotes](#)

[Baking and Crochet](#)