Shrish Kumar Singhal

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Experience

Data Scientist June 2025 – Present
Boson Motors *San Jose, CA*

- Designed and deployed a reinforcement learning framework using Soft Actor-Critic to optimize autonomous vehicle control over 10+ dynamics parameters, improving offroad driving performance by 25% and integrating with production telemetry pipelines.
- Built a real-time anomaly detection system using LSTM autoencoders and statistical methods that processes 50K+ sensor readings per hour and predicts vehicle failures up to 2 weeks in advance, with monitoring and evaluation to track model quality over time.

Quantitative Researcher Intern June 2024 – Oct 2024
New York University *New York, NY*

- Developed an LSTM-based systematic long/short trading strategy across NASDAQ, S&P 500, and Dow Jones index pairs using 10+ years of market data, achieving 12% annual returns in backtesting with careful experimentation and ablations.
- Integrated macroeconomic indicators (e.g., 10-year Treasury rates) into the modeling pipeline using Python and pandas, improving model performance by 15% during high-volatility periods and building reusable evaluation scripts for regime analysis.

Student Researcher, Computer Vision Lab Aug 2021 – Sept 2023
Indian Institute of Technology Guwahati *Guwahati, India*

- Engineered an attention-based deep learning model reaching 90% accuracy for lymph node detection from medical images, improving oncology diagnostic efficiency by 30% and validating with robust test sets.
- Implemented CT bone tissue segmentation using region-growing algorithms, achieving a 93% Dice similarity coefficient and collaborating with clinicians on data quality and evaluation criteria.

Education

New York University, Tandon School of Engineering Sept 2023 – Jan 2025
Master of Science in Computer Science *New York, NY*

Indian Institute of Technology (IIT) Guwahati July 2019 – May 2023
Bachelor of Technology in Electronics & Communication, Minor in Computer Science *Guwahati, India*

Technical Skills

Machine Learning: Large Language Model Fine-Tuning (LoRA, quantization), Reinforcement Learning (SAC, PPO), Time-Series Modeling (LSTM, Transformers, ARIMA), Anomaly Detection, Computer Vision, Evaluation Design.
Languages & Frameworks: Python, C++, SQL, R, PyTorch, TensorFlow, Keras, scikit-learn, NumPy, pandas.
Tools & Platforms: Spark, Polars, Docker, Git, Jupyter, AWS, VectorDB, end-to-end ML pipelines.

Projects

LLM Fine-Tuning for Mathematical Reasoning – Fine-tuned Llama3-8B with LoRA and 4-bit quantization to reach 82.5% accuracy on mathematical reasoning tasks, including data curation, training orchestration, and evaluation harnesses for tracking model improvements .
Stable Diffusion XL Personalization – Fine-tuned SDXL with DreamBooth for personalized image generation from 5 user images and a text prompt, reducing memory usage by 30% on consumer GPUs via training and inference optimization .
IceCube Neutrino Analysis – Processed 100GB of neutrino data using Spark/Polars and trained convolutional neural networks to improve event prediction accuracy by 30%, focusing on scalable experimentation, data pipelines, and robust evaluation .

Achievements

Top 10 Finalist – National Aadhaar Hackathon 2021 (2,700+ teams) for an identity verification application.
Top 0.1% – Joint Entrance Examination 2019 (Ranked 1,395 among 1.5M+ candidates).
KVPY Fellowship 2018 – Top 0.5% of 50,000+ candidates, national science scholarship.