

ANIRUDHAN RAMKUMAR

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SUMMARY

Computer Science undergraduate passionate about data science, predictive modeling, and intelligent systems. I build impactful solutions at the intersection of AI, automation, and optimization — from supply chain tools to time-series forecasting. With hands-on experience in machine learning, full-stack dev, and quantum-enhanced models, I thrive on solving real-world problems through data and innovation.

WORK EXPERIENCE

Research Intern – Quantum Machine Learning, VIT Chennai

(January 2025 - Present)

- Working under Dr. Shridevi S on quantum-enhanced ML models for time series analysis.
- Co-authoring a paper highlighting the application of hybrid models in real-world forecasting scenarios.
- Tools used: PennyLane, darts, statsmodels.

PROJECTS

- Hybrid Quantum LSTM for Weather Forecasting | IBM Qiskit Fall Fest Hackathon** (October 2024)
 - Developed a **Hybrid Quantum LSTM model**, combining classical LSTMs with **quantum neural networks** to forecast **temperature trends**, optimizing **time-series prediction performance**.
 - Leveraged **Optuna-based hyperparameter tuning** to fine-tune **LSTM layers**, **hidden units**, and **learning rates**, achieving **forecasting accuracy of 92%**.
 - Applied **PyTorch** and **quantum feature maps** to achieve high-precision **temperature predictions**, enhancing forecasting capabilities in dynamic conditions.
- Development of a Freshness and OCR Detection Model | Flipkart Grid Hackathon** (December 2024)
 - Engineered a **real-time brand recognition system** for **bulk shipment detection** with **sub-1000ms response time** and **95%+ accuracy**.
 - Implemented **regex-based expiry date extraction** with **98% precision** across diverse product formats, improving **supply chain data accuracy**.
 - Designed a **multi-factor freshness evaluation model** for **perishable goods**, integrating **mobile and external camera devices** for versatile data collection, improving **operational efficiency**.
- Development of Intelligent Logistics Optimization System for Road and Air Operations | FedEx SMART Hackathon** (March 2025)
 - Reduced software licensing and infrastructure costs by 85-90%** by leveraging **open-source APIs** for real-time routing, weather tracking, and traffic management.
 - Improved resource utilization by 35%** and **reduced operational costs by 24%** through automated warehouse management and truck scheduling modules.
 - Enhanced sales and unit forecasting accuracy by 31%**, driving optimized inventory planning and proactive logistics decisions.
 - Contributed to sustainability goals with an estimated **22% reduction in carbon emissions** via environment-friendly routing strategies and optimized vehicle allocation.
- Automated Disk Cleanup using UIPath Studio | Self-Initiated** (November 2024)
 - Created an **RPA solution** with **UIPath Studio** to automate the identification and removal of redundant system files, improving **system performance** and **storage efficiency**.
 - Developed a reliable **workflow** incorporating **error handling** and **logging mechanisms** to ensure seamless execution and reduce the risk of **system failures**.
 - Reduced **disk usage** and improved **system speed**, contributing to optimized **performance** for users.

SKILLS

- Programming & Data Science:** Python, C, C++, Java, HTML, CSS, JavaScript, SQL, R, MATLAB, Flask
- Machine Learning & AI:** Scikit-Learn, TensorFlow, PyTorch, PennyLane (Quantum ML), Reinforcement Learning, Natural Language Processing (NLP), Generative AI, Agentic AI.
- Embedded Systems:** Arduino, Sensors, Serial Communication
- Computer Vision:** OpenCV, Image Processing, Object Detection
- Soft Skills:** Problem-solving, Collaboration, Time Management, Communication

CERTIFICATIONS		
•	Object Detection, NLP, Generative AI Bootcamp, 2025 – Krish Naik, Udemy	<i>(Ongoing)</i>
•	Quantum Machine Learning – KwantumG Research Labs Pvt Ltd., VIT Chennai	<i>(August 2024)</i>
•	The Complete Agentic AI Engineering Course – Ligency Team, Udemy	<i>(July 2025)</i>
•	AI for Medical Diagnosis , DeepLearning.AI, Coursera	<i>(April 2025)</i>

HACKATHONS AND COMPETITIONS		
•	Distinguished among the Top 5 in the FedEx SMART Hackathon 2025 , hosted by FedEx & IIT Madras , for pioneering advancements in logistics optimization.	<i>(January 2025)</i>
•	Semi-finalist (Top 75) in the Flipkart GRID 6.0 Robotics Challenge (International) , demonstrating cutting-edge expertise in robotics, automation, and complex problem-solving on a global stage.	<i>(December 2024)</i>
•	Finalist in the IBM Qiskit Fall Fest 2024 Hackathon , recognized for exceptional proficiency in quantum computing , leveraging advanced algorithms and innovative problem-solving to push the boundaries of computational intelligence.	<i>(February 2024)</i>