

Jayvardhan Singh

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EDUCATION

- NYU Tandon School of Engineering** New York, USA
M.S. - Computer Engineering — GPA: 3.67 (4 point scale) May 2024
Courses: Big Data, Machine Learning, Deep Learning, Real-Time Embedded Systems, Internet Architecture and Protocols, Principles of Database Systems, Computing Systems Architecture
- Manipal University Jaipur** Jaipur, India
B.Tech - Computer and Communications Engineering — GPA: 8.02 (10 point scale) June 2022
Courses: Object Oriented Programming with Java, Web Technologies, Computer Networks, Cloud Computing, Software Testing, Unix Shell Programming, Operating Systems

SKILLS

- Programming Languages:** Python, C++, C, JavaScript, SQL
- Frameworks & Libraries:** TensorFlow, PyTorch, PyTorch Distributed, ONNX, Express, Spring Boot, Flask, Pytest
- Technologies & Tools:** Git, Linux, Docker, AWS (Lambda, S3, RDS, SageMaker), GCP (Vertex AI), Jenkins, GitHub Actions, PostgreSQL, MongoDB
- Soft Skills:** Effective Communication, Critical Thinking, Adaptability, Teamwork

EXPERIENCE

- HPCL-Mittal Energy Ltd.** Bathinda, India
Software Engineer Intern July 2023 - August 2023
 - Training Framework Efficiency:** Engineered a PyTorch FSDP-based training framework with hyperparameter tuning and logging, increasing model training efficiency by 25% and enhancing experiment tracking.
 - Evaluation Framework:** Designed and implemented a standardized model evaluation framework, improving reproducibility across 50+ experiments and enhancing performance metrics.
 - Quantization Techniques:** Analyzed and applied ONNX post-training quantization techniques, reducing inference latency by 30% while maintaining 98% accuracy in model deployment.
- Karvi E&C** Vadodara, India
Software Engineer Intern January 2022 - May 2022
 - Defect Detection System:** Developed and deployed a Faster R-CNN defect detection system with TensorFlow and FastAPI on GCP's Vertex AI, reducing downtime by 10 hours/week.
 - Detection Accuracy:** Achieved 85% detection accuracy by annotating 1,500 production images, training a Faster R-CNN model, and deploying it with Docker on GCP.
 - Automated Analysis:** Implemented automated periodic image analysis, increasing throughput by 25 units per day and enabling real-time alerts for defect detection and operator intervention.

PROJECTS

- Real-Time Stock Market Data Processing Pipeline [GitHub]:**
 - Spearheaded the creation of a data pipeline using Python, Kafka, and Spark, processing over 350,000 data points per hour and reducing Finnhub.io data ingestion latency by 20%.
 - Improved stock price trend prediction accuracy by 15% with a predictive GBM model, leveraging Scala and Apache Superset for insightful data visualization.
- A Study on Image Caption Generators [GitHub]:**
 - Engineered image caption generators using VGG16, ResNet50, LSTM, and GRU, achieving up to 85% accuracy on Flickr8k and 82% on MSCOCO, refining NLP techniques to enhance model performance by 5%.
 - Performed comprehensive model evaluation with BLEU scores, demonstrating proficiency in AI and machine learning applications.
- Gesture-Based Security System for Embedded Devices [GitHub]:**
 - Minimized false acceptance rates to below 5% by engineering a microcontroller-based authentication system with 98% gesture recognition accuracy.
 - Enhanced system usability and participant satisfaction by designing a user-friendly interface with LED feedback.

LEADERSHIP AND COMMUNITY IMPACT

- Engagement Ambassador, New York University** New York, NY
Fostered alumni relations and raised funds for university scholarships and research.
- Joint Secretary, Kiwanis Club of Gurgaon, India District, Kiwanis International** Gurugram, India
Youngest board member, focusing on child welfare in line with Kiwanis International's vision.
- Head Of Coordinators, Litmus - The Literary Society, Manipal University Jaipur** Jaipur, India
Led 20 senior coordinators for event management and marketing in a 400+ member club.