

Vishal Singh Yadav

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SUMMARY

Experienced Data Scientist and Machine Learning Engineer adept at developing and deploying ML models, NLP solutions, and AI tools. Proven track record of delivering impactful solutions that enhance decision-making and streamline operations. Expert in solving complex challenges with innovative approaches to drive project and organizational success.

EDUCATION

- **Indian Institute of Technology** Hyderabad, India
Masters of Technology (by Research) - Computer Science and Engineering; GPA: 8.38 Jan 2020 - Dec 2022
Thesis: Context Aware Question routing in CQA sites
Relevant Courses: Machine learning, Deep Learning, Natural Language Processing, Advanced-Data structures and Algorithms Design
- **GGS Indraprastha University** New Delhi, India
Bachelors of Technology - Computer Science and Engineering; Percentage: 71.2 Jul 2014 - May 2018
Relevant Courses: Artificial Intelligence, Machine Learning, Applied Mathematics, Algorithm Design, Data structure, Data Mining

EXPERIENCE

- **Carelon Global Solutions** Hyderabad, India
Associate Data Scientist Jul 2023 - Present
 - Developed and deployed NLP models using advanced LLM technology, applying data analytics and mathematical models to streamline underwriting and enable creative conversational AI.
 - Collaborated with cross-functional teams to deploy machine learning models in cloud (AWS/Azure) and local environments, utilizing business rules, data visualization, and mathematical software to enhance decision-making and operational efficiency.
 - Applied data preprocessing techniques and large-scale optimization strategies, interpreting data to improve model accuracy and efficiency.
 - Designed models that identified High-Cost Claimants and Special Conditions, resulting in a 5% improvement in predictive accuracy through advanced data analytics.
 - Leveraged cloud experience (AWS, Azure) and containerization (Dockerizing Python) for scalable, efficient model deployment.
- **Qulabs Software India Pvt Ltd** Hyderabad, India
Machine Learning Engineer Mar 2023 - Jul 2023
 - Spearheaded the development of a conversational AI chatbot using distributed ML frameworks and advanced algorithms for real-time document retrieval and approximate matching across large datasets.
 - Engineered algorithms and mathematical models to identify and mitigate quantum vulnerabilities in cryptographic systems, contributing to secure data processing and enhancing AI frameworks for improved chatbot performance.
 - Implemented data preprocessing and real-time model deployments on AWS and in-house platforms, optimizing machine learning solutions.
 - Mentored developers on best practices in code development, data preprocessing, and deployment.
- **Krama Lab, IIT Hyderabad** Hyderabad, India
Research Assistant Jan 2020 - Dec 2022
 - Researched point cloud segmentation and knowledge graph completion, employing few-shot learning techniques and advanced data analytics to tackle complex machine learning challenges.
 - Applied graph neural networks (GNNs) for knowledge graph completion and explored their potential in autonomous vehicles and object detection within research projects.
 - Utilized mathematical models and data analytics to enhance point cloud segmentation and classification, contributing to advancements in AI research.
- **Bosch Global Software Technologies** Bangalore, India
Machine Learning Research Intern Jan 2022 - May 2022
 - Researched and applied graph neural networks (GNNs) in the automotive sector, focusing on object detection and sensor fusion for autonomous vehicle systems.
 - Developed algorithms and models for segmentation and classification of LIDAR-derived point cloud data, contributing to enhanced object detection and environmental awareness.
 - Integrated distributed ML frameworks to improve model performance and efficiency.

CERTIFICATIONS

- **Carelon Global Solutions & Prizmato:** Advanced Certification in Generative AI
- **nvidia:**
 - Applications of AI for anomaly detection
 - Fundamentals of Deep Learning, Building Transformer-based NLP Applications
 - Fundamentals of Accelerated Data Science, Fundamentals of Accelerated Computing, and Accelerating Data Engineering Pipelines
- **University of Washington:** Machine Learning Specialization (through Coursera)
- **University of Michigan:** Applied Machine Learning (through Coursera)
- **deeplearning.ai:** Deep Learning Specialization (through Coursera)

SKILLS

- **Programming Languages:** Python, C++, Bash
- **Frameworks & Libraries:** TensorFlow, PyTorch, HuggingFace, SpaCy, Scikit-learn, NLTK
- **Tools & Technologies:** LLMs, OpenAI, Docker (Containerization), Git, AzureAI, Matlab, LaTeX
- **Data Skills:** Data Preprocessing, Real-Time Model Implementations, Few-Shot Learning, Graph Neural Networks (GNNs), Object Detection, Sensor Fusion, Distributed ML Frameworks, DevOps, SQL
- **Platforms:** Linux, AWS, GCP, Windows

ACHIEVEMENTS

- **Carelon Global Solutions:**
 - **Award for Rapid Product Deployment:** Awarded by the Director of Data Science for the swift and successful deployment of a critical product, significantly improving operational efficiency and supporting key business objectives.
 - **Go Above Award:** Honored for exceptional dedication and leadership, effectively leading the team to deliver a crucial member dashboard within a demanding 24-hour deadline.
 - **Go Above Award:** Recognized for the accelerated delivery of the ARROW project, successfully managing business changes and meeting tight deadlines.
- **Mentorship:**
 - **AI and Advanced Technologies Mentorship:** Provided expert mentorship to emerging professionals through a course facilitated by NSE Talentsprint and IIT Hyderabad, contributing to developing future leaders in AI and advanced technologies.

PROJECTS

- **ARROW - AI/ML-Driven Underwriting Risk Assessment Tool (NLP, Machine Learning):** Contributed to the development of ARROW, an AI/ML-based underwriting risk assessment tool for Elevance Health. Leveraged natural language processing (NLP) and machine learning algorithms to analyze and integrate financial, clinical, and demographic data, automating risk assessment. Incorporated data visualization techniques and real-time model implementations to present risk assessment insights effectively, improving decision-making efficiency and reducing underwriting time by an estimated 20%. Applied data preprocessing, large-scale optimization, and creative problem-solving skills to enhance the insurance rating system and strengthen market competitiveness.
- **Medical-LLM (Machine Learning, NLP, LLM):** Contributed to the development of Medical-LLM, an advanced tool designed for Elevance Health. Utilized cutting-edge Language Model (LLM) technology to process and analyze sensitive medical data, applying data analytics, real-time model implementations, and mathematical models to enhance data handling processes. Integrated cloud experience and ensured strict adherence to HIPAA compliance and user privacy standards. Demonstrated outstanding communication skills to ensure accurate data processing, operational integrity, and adherence to best practices in distributed ML frameworks and data preprocessing.
- **Medical Compliance Suite - AI-Powered Automation for Healthcare Compliance (Machine Learning, NLP, LLM):** Contributed to the development of the 'Compliance' suite, a comprehensive set of AI-powered tools designed to automate medical compliance processes for Qulabs Software in the US Healthcare sector. Applied business rules, data visualization, and data preprocessing techniques to automate compliance processes and improve workflow accuracy. Incorporated real-time model implementations and large-scale optimization to ensure adherence to regulatory standards and increase overall efficiency. Utilized creative problem-solving to design advanced document matching algorithms, automated compliance checks, and applied few-shot learning and distributed ML frameworks to enhance system performance.

PUBLICATIONS

- **Context Aware Question Routing in Community Question Answering Sites:**
Vishal Singh Yadav and Manish Singh - May 2023
Proposed a context-aware recommendation system for online QA platforms that optimizes the routing of questions to the most suitable answerers. The system employs advanced techniques to enhance the relevance and diversity of recommendations, resulting in a significant improvement across multiple evaluation metrics. This work contributes to more efficient knowledge sharing and user engagement on community-driven platforms.