ABHISHEK JAIN

AI/ML Engineer

Mobile No: – **+91 8108874144**
Email Id: – abhishek_jain@outlook.in

PROFILE STATEMENT

Experienced **AI/ML Engineer** with **8+ years** of expertise in **NLP, Computer vision, and GEN AI.** I have a strong track record of leveraging data-driven solutions to drive business growth and optimize operations. Proficient in **python, microservices**, **cloud technologies** with a track record of delivering impactful results across diverse industries. Skilled in translating complex findings into actionable recommendations, collaborating with cross-functional teams, and driving data-informed decision-making. A **continuous learner** who thrives in dynamic environments, committed to utilizing data-driven approaches to unlock opportunities and create value. Given an opportunity in any task or field would never fail to come out as an outstanding competitor.

TECHNICAL SKILLS

OS – Linux, Windows 10/11, Raspberry Pi, Arduino.

Front-End – HTML/CSS/JS, jQuery.

Back-End – Algorithm & Data Structures, Java, Python, ROS, REST API, WebSocket, MQTT, Apache Kafka.

Intermediate skills – AI/ML, Custom Vision, NLP, Time series, GAN, GEN AI, Tensorflow, pytorch

Database Skills – SQL server, PostgreSQL, MongoDB, MySQL.

Cloud Skills – AWS Services, Azure, docker, docker-compose, Kubernetes.

NON-TECHNICAL SKILLS

Leadership, Communication, Time Management, Event Management, Teamwork.

PROFESSIONAL EXPERIENCE

☞ **Company Name:** NTT DATA
Duration: Oct'24 to Present
Role: Lead AI Engineer
Skills: Python, TensorFlow/Keras, PyTorch, Scikit-learn, GEN AI (LLM, RAG, Langchain, unstructured-io, Agents, ollama, huggingface, deepeval, ragas), PostgreSQL, AWS & Azure Services, docker, Kubernetes, Linux, git.

Project Highlights:

1. **Generative AI for Industrial IoT:**
    - Steel plant faced frequent rolling mill downtime, increasing costs and reducing efficiency.
    - Develop a Generative AI solution for anomaly detection, predictive maintenance, and process optimization.
    - Built a Digital Twin using Variational Autoencoders (VAE) for anomaly detection and XGBoost for failure prediction.

- Increased mean time between failures reduced maintenance costs, improved throughput, and cut energy usage.

☞ **Company Name:** CAPGEMINI ENGINEERING (**Centre of Excellence**)
Duration: July'21 to Oct'24
Role: Professional II (Senior AI Engineer)
Skills: Python, TensorFlow/Keras, PyTorch, Scikit-learn, MLFlow, GEN AI (LLM, RAG, Langchain, unstructured-io, Agents, ollama, huggingface, deepeval, ragas), openCV, GAN, ROS, MQTT, PostgreSQL, AWS & Azure Services, docker, Kubernetes, Linux, git, JIRA, Scrum.

Projects Highlights:

1. **Industrial Chat Application with Generative AI (LLM):**
   - An industrial client required an AI-based chat application for efficient information retrieval across hundreds of thousands of documents.
   - Develop a chatbot that could process and retrieve contextually accurate responses from large document repositories.
   - Designed a LangChain-based Retrieval-Augmented Generation (RAG) pipeline with ChromaDB for document storage and OpenAI for response generation.
   - Enabled an 80% increase in retrieval efficiency using advanced techniques like ANN search, enhancing response accuracy and decreasing support time for document inquiries.
2. **Generative AI in Customer Interaction:**
   - Developed a multi-domain conversational AI system requiring integration of multiple RAG models for handling diverse queries (e.g., technical, legal, and customer support).
   - Designed an intelligent query routing and response aggregation framework to optimize model selection, improve relevance, and enhance user experience.
   - Implemented an agent-based architecture using LangChain, enabling intent detection, query routing to specialized RAG models, and dynamic response merging.
   - Achieved improvement in query accuracy and reduced response times by 20%, enhancing scalability and modularity for future domain expansions.
3. **Autonomous Inventory Vehicle (AIV) Development:**
   - Warehouse operations required an autonomous solution for inventory transport to reduce manual workload and enhance operational efficiency.
   - Design and develop an autonomous vehicle using the ROS framework capable of obstacle detection and dynamic path planning.
   - Integrated LiDAR, IMU sensors, and camera modules to enable navigation and implemented pickup and drop operations.
   - Successfully deployed AIV for operational testing, reducing manual intervention and improving task completion time in inventory movement.
4. **Surveillance & Inspection using Object Detection Models:**
   - Capgemini needed a robust solution for enhanced surveillance and inspection across various environments.
   - Develop and deploy object detection and segmentation models to support human safety and compliance monitoring.
   - Built custom models using pre-trained models like YOLO, OpenPose and integrated them into a microservices architecture for multiclass object detection and classification.
   - Enabled accurate detection of human presence, protective gear compliance, and improved security, achieving a 95% accuracy in detecting specified objects.
5. **Vision-Based Object and Anomaly Detection Strategy for Weld Area:**
   - One of the large automotive company aims to improve the accuracy and efficiency of car component inspections during manufacturing. Current manual inspection methods are time-consuming and prone to errors, which affects scalability and quality.

- Quality control for welded components required an automated system to identify defects and anomalies that could compromise product safety and integrity.
- Develop a vision-based detection strategy using object recognition and anomaly detection to inspect weld areas in real-time.
- Leveraged CNN-based computer vision models like yolov5 to detect irregularities in weld patterns and integrated anomaly detection algorithms to classify defects. Deployed the solution in a production environment with real-time monitoring capabilities.
- The solution leverages cameras and edge computing to perform real-time inspections, improving precision and reducing human error. Enhanced inspection accuracy significantly reducing manual intervention, and enabling early detection of potential issues, which helped lower defect rates.

6. **CI/CD Deployment Pipeline for Production Environments:**
    - Capgemini's development process needed a standardized deployment pipeline to streamline releases and ensure consistency.
    - Create an end-to-end CI/CD deployment pipeline for development and production using Docker Compose and Kubernetes.
    - Developed a pipeline that automated retraining models with new data, deployment stages, incorporated testing, and facilitated seamless integration with other cloud environments.
    - Reduced deployment time by minimizing errors in production and enabled faster iterations of development.

☞ **Company Name:** E-emphasys Solutions PVT. LTD.
Duration: Sep'18 to July'21
Role: Software Engineer II (Machine Learning Engineer)
Skills: Python, Flask, Microservices, REST API, Machine Learning, NLP, Time series, TensorFlow/Keras, PyTorch, Scikit-learn, Jupyter Notebook, Docker, MLFlow, MYSQL, PostgreSQL, Android, AWS Services, Azure, docker, Linux

E-Emphasys is a product-based company and provide an end-to-end platform for equipment dealers and rental companies.

Projects Highlights:

1. **e-Emphasys Virtual Assistant:**
    a. Quality control required insights from textual data to improve product reliability and predict maintenance needs.
    b. Develop an NLP-powered solution to analyze textual feedback and generate insights for proactive quality improvement.
    c. Built models using NLP techniques for text summarization, classification, and predictive analytics, implemented via REST API services.
    d. Improved product maintenance efficiency by 25% through faster issue detection and actionable insights.
2. **E-Portal Revenue Analysis and Recommendations:**
    a. E-emphasys sought to increase sales by identifying top-performing products across store locations.
    b. Create a recommendation engine to analyze sales data and provide actionable insights for inventory and marketing.
    c. Developed a model using frequent itemset mining and time-series analysis to predict high-demand items.
    d. Enhanced sales by 15% through targeted product placements, contributing to an optimized inventory strategy.

3. **Topic Modelling for Technician Support:**
    a. Technicians needed a streamlined way to understand recurring issues and manage customer complaints effectively.
    b. Build a topic modelling system to classify and present common complaint themes.
    c. Implemented LDA-based topic modelling and integrated it into the support system, making issues easy to access and understand.
    d. Reduced technician support time by 30%, leading to quicker resolutions and higher customer satisfaction.
4. **Integrated timeline of products launches and sales in e-Portal:**
    a. E-emphasys sought a solution to track and visualize product launch timelines alongside sales data to better understand product performance over time.
    b. Design and implement an integrated timeline feature within the e-Portal to visualize product launches, sales trends, and peak performance periods.
    c. Built a feature using React JS and time-series data analysis that combined product launch dates with sales data, enabling dynamic timeline visualization within the portal.
    d. Improved strategic decision-making by providing insights into product lifecycle trends, leading to a 15% increase in targeted marketing effectiveness.
5. **Stripe Payment Gateway integration in e-Portal:** Integrated Stripe for secure payments, reducing checkout time by 30% and increasing transaction completion by 25%.

☞ **Company Name**: Marketplace Technology PVT. LTD.
Duration: Mar'17 to Sept'18
Designation: Software Developer I (Full stack Developer)
Skills: Python, Flask, Django, Microservices, REST API, SQL server, PostgreSQL, React JS, Android, AWS Services, Azure, docker, Linux

Worked on client side at BSE India PVT. LTD. as Associate officer. The project was about streamlining the process of handling trade-related transaction and earnings management.

Projects Highlights:
1: Member Status Active/Inactive API
2: Company Group Change API
3: Interoperability API
4: Scheduler API
5: IDB WEB portal

Key Responsibilities:
- Developed broking companies web interface for report and data provider using flask Framework.
- Implementing services to monitor designated locations for receiving files and trigger workflows.
- Implementing modules to add/update/remove and generate reports related to trading and transactions.
- Designing and developing an agent dashboard for respective members in the company.
- Developing an integrated database management system where the data is generated is generated for each trading day.
- This included effort and time estimation, task allocation, clarifying business requirements where needed and managing the project progress.
- Designing and implementing workflows in line with the business requirements.

☞ **Company Name**: L&T Infotech.
Duration: Aug'16 to Jan'17

Designation: Associate Trainee

Joined as trainee and took training in python and api development. Later on, tested troubleshooting method for client project, and documented resolutions for inclusion in knowledge base for support team use. Gained understanding of industry procedures by actively working with seniors.

CERTIFICATIONS / TRAINING

- An introduction to Linear Algebra
- Deeplearning.ai course from Coursera
- AWS Developer Associate Training from Amazon
- Oracle Certified Associate, Java SE 7 Programmer.
- Python: Complete Python boot-camp from Udemy.
- Participated in GEN-AI Hackathon and completed AZURE GEN-AI course.

AWARDS / AFFILIATION

- Received GEM award for outstanding Performance and Innovation by Capgemini Engineering.
- Awarded for Outstanding Contribution in Delivery by Capgemini Engineering.
- Awarded for Spark and Innovation in Application Development by E-Emphasys Solutions PVT. LTD.
- Awarded twice for outstanding performance on quarterly basis by E-Emphasys Solutions PVT. LTD.
- Appreciated for Professionalism and dedication towards work by E-Emphasys Solutions PVT. LTD.
- Affiliated in Design and Development by Bombay Stock Exchange (BSE).
- Worked as supporting co-ordinator for NGO committee.
- Worked as Training and Placement coordinator in Training and Placement Cell, VCET for the year 2014-16.

ACADEMIC QUALIFICATIONS

Examination	Institution	CGPI / %
B.E. (2016)	Mumbai University	6.75
H.S.C. (2012)	Maharashtra Board	64.67%
S.S.C. (2010)	Maharashtra Board	83.64%

PERSONAL DETAILS

- Gender: Male
- Marital Status: Married
- Languages Known: English, Hindi
- Hobbies: Web surfing, Video Gaming, Netflix

Declaration:
I hereby declare that above information is true to my knowledge.