CHARITA BAJAJ

Sr. Software Engineer
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Summary

Motivated and results-driven AI and deep learning specialist with 6+ years of experience in designing, implementing, and optimizing machine learning models and algorithms. Proven expertise in developing innovative solutions for complex problems, with a strong foundation in computer science, mathematics, and data analysis. Passionate about leveraging AI technologies to drive business growth and enhance user experiences

Key Skills

- With an overall experience of 6 years , Dynamic and results - driven Artificial intelligence and deep learning professional with a proven track record of innovative solutions
- Proficient in Python, Tensorflow, Keras, Pytorch and other deep learning frameworks. Experience with natural language processing (NLP) techniques.
- Strong understanding of machine learning algorithms such as Decision trees, Random Forest, k-nearest neighbors, SVM, k-means clustering.
- Proficient in Linear regression, logistic regression, neural networks reinforcement learning
- Developed and implemented deep learning models for Image classification, object detection and semantic segmentation.
- Conducted data analysis to identify patterns and trends, contributing to business intelligence and decision making processes.
- Implemented Convolutional neural networks, Recurrent neural networks, Long short term networks (LSTM), Generative adversial networks (GANs)
- Technologies such as LLMOps , Large model deployments, LLM Security, Vector databases etc
- Mitigate potential risks related to AI and LLM Development and deployment , emphasizing data trust and security
- Proficient in Gen AI, including their architecture , algorithms and training methodologies
- Understanding of limos principles , prompt engineering, Langchain and Reinforcement learning
- Experience with Azure cloud services
- Commitment to ethical AI practices and security standards
- Understanding of Transformer based LLMs like BERT, ROBERTa, DistilBERT
- Collaborated with cross functional teams to design and deploy AI solutions tailored to specific business needs.
- Experience with Hugging Face models
- Optimized model performance through hyper parameter tuning and regularization techniques
- Experience using open-source libraries in AI/ML/DL
- Masters in Artificial intelligence and Deep Learning by IIT Guwahati
- Expertise in responsible AI practices ,ensuring transparency and interpretability in all models

Detailed Experience

Company	Channel Fusion
Role and Responsibilities	**Senior AI engineer** • AI Solutions Development: Design and build AI-powered applications and services, with a particular focus on natural language processing (NLP) and chatbot projects leveraging Azure Cognitive Services. • Image Classification & AI Tagging: Lead the development of AI models to classify and tag images for automotive and tire industry use cases (e.g., tire defect detection, product categorization). Predictive Modeling: • Create and optimize prediction models, especially in forecasting tire performance, wear rates, and other relevant indicators in the automotive sector. • Cloud Deployment & Management: Architect, deploy, and maintain AI/ML models in cloud environments, focusing on scalability, security, and performance within Azure ecosystems (e.g., Azure ML , Cognitive Services). Data Handling: Process large datasets from diverse sources, ensuring data is pre-processed, cleansed, and organized for AI model training and deployment. • Collaboration & Leadership: Work closely with data scientists, software developers, and cross-functional teams to ensure timely delivery of AI solutions. Mentor junior team members and offer technical guidance.
Projects	**Project 1: Chatbot Development with Azure AI Services in C# and .NET** **Description:** Developed and deployed a robust chatbot solution using Azure AI services integrated with a .NET backend in C#. The chatbot utilized Azure Cognitive Services, including Language Understanding (LUIS) and Azure Bot Service, to create a conversational agent capable of natural language processing and contextual dialogue management. It supported customer queries, troubleshooting, and transactional tasks, enhancing customer engagement and providing automated support for an enterprise-level application.

	Project 2: Image Classification Using Ensemble Model for Tire Client Categorization **Description:** Designed and implemented an image classification solution using an ensemble model to categorize and tag images for various tire clients. The solution combined multiple deep learning models, including Convolutional Neural Networks (CNNs), to improve classification accuracy for tire images across several categories such as product types, wear patterns, and defects. The project leveraged advanced frameworks like TensorFlow and PyTorch, coupled with AI platforms like Roboflow, and significantly optimized the accuracy of the tagging system for automotive clients. **Project 3: Prediction Model on Rewards, Promotions, and Spiff Data for Hankook, Kumho, and Falken** **Description:** Built a predictive analytics model to forecast sales performance and optimize promotional and spiff (Sales Performance Incentive Fund) strategies for tire companies Hankook, Kumho, and Falken. The model utilized historical sales data, promotional activities, and rewards program results to provide actionable insights into future trends, allowing the companies to adjust their marketing and sales efforts for maximum efficiency. The project involved data processing, feature engineering, and implementation of regression and classification algorithms. **Project 4: Optimizing Palantir Foundry Platform for John Deere** **Description:** Led the optimization of workflows within the Palantir Foundry platform for John Deere, focusing on improving data-driven decision-making processes. The project involved enhancing the inventory replenishment workflow and developing an efficient system for managing supplier volume bonus, rebate, and incentive programs. By refining the data pipelines and ensuring streamlined operations in the Foundry environment, the project helped John Deere achieve better operational efficiency and data accuracy across their supply chain management systems.
Duration	24rth July 2024 to Present

Company	Incture Technology Pvt. Ltd
Role and Responsibilities	• **AI Engineer / Data Scientist** Developed and deployed deep learning models for image recognition, NLP, and predictive analytics. Collaborated with cross-functional teams to integrate AI solutions into existing systems, enhancing functionality and performance. Conducted data analysis and preprocessing to ensure high-quality inputs for machine learning models • **Machine learning engineer** Designed and implemented machine learning algorithms to solve business problems, including customer segmentation and recommendation systems. Optimized model performance through hyper parameter tuning, feature engineering, and model selection. Developed custom deep learning architectures using frameworks such as TensorFlow and PyTorch. Presented findings and recommendations to stakeholders, facilitating data-driven decision-making • **Quality Consultant** Quality testing, building function applications in Azure, taking care of tables in azure synapse analytics, using synapse studio for development work, AZ 900 Azure fundamentals knowledge, data engineering and code development work. Running and monitoring pipelines in Azure
Duration	1st January 2022 to 14th June 2024
Project	• **Customer Churn Prediction Project** **Overview:** To effectively retain customers, telecommunications businesses need to be able to analyze customer churn. However, retaining existing customers is more costly than obtaining fresh customers. Thus we try to predict the retention rate of a customer using a customer churn prediction project. • **Conversational AI Chatbot using LLMs** **Overview:** Developed a conversational AI chatbot using a LLM to provide automated customer support. Fine-tuned the LLM on a dataset of customer queries and responses. Implemented a conversational interface using a cloud-based platform. Achieved an accuracy of 90% in responding to customer queries. • **Image Classification using CNNs** **Overview:** Developed a deep learning model using convolutional neural networks (CNNs) to classify images into different categories. Trained the model on a dataset of 10,000 images using transfer learning. Achieved an accuracy of 95% in classifying images.

Company	eClerx India Pvt. Ltd.

Role and Responsibilities	• **Quality Consultant (Black Belt)** Conducting Green, Yellow, White belt six-sigma projects on IT processes. Identifying factors that are critical to quality and measuring the success of the quality initiative in terms of productivity, efficiency, cost reduced and revenue gained. Driving Lean six-sigma projects for automations implemented for improving the key performance indicators of the processes Completed 6 Quality projects in CHAT, analytics and CGI Business while representing Quality departmental updates& suggestions to all senior Management • **Predictive analytics professional and Data consultant** Gather requirements from the client and document functional specifications for efficient visualization in Dashboards. Defining topologies/models that suit the business needs and conduct infrastructure sizing for support. Collaborating Time-Series Forecasting procedures to develop machine learning models. Working on Retail Promotion Optimization strategies. Assist the team in Data mining and Data warehousing steps, from SQL/DB2 (firing and troubleshooting). Treating the Missing Values if any in the dependent variables or the dummy variables. Designing feasibility options to handle Big Data analysis in R. Running Validation procedures to check the FIT of the model. Consistently mapping down the Business objectives of the client with the Dashboards being generated. MSCM-ARIMA modeling procedures and MAPES calculation& laying out summary statistics
Duration	14th March 2016 to 30th August 2019

Technical Skills

- **Artificial Intelligence (AI):** Machine learning, deep learning, natural language processing (NLP), computer vision
- **Machine Learning (ML):** Supervised, unsupervised, and reinforcement learning, model evaluation, and hyperparameter tuning
- **Deep Learning (DL):** Convolutional neural networks (CNNs), recurrent neural networks (RNNs), long short-term memory (LSTM) networks, transformers
- **Generative AI:** Generative adversarial networks (GANs), variational autoencoders (VAEs), transformers
- **Large Language Models (LLMs):** BERT, RoBERTa, DistilBERT, fine-tuning, and deploying LLMs for NLP tasks
- **Programming Languages:** Python, TensorFlow, PyTorch, Hugging Face Transformers, Jupyter notebooks

Academics

Degree	School/College	Year Passing	Percentage/CGPA
MBA	ICFAI Business School, Hyderabad	2016	7.2 (CGPA)
B.Tech	Sukhmani Institute of Engineering &Technology, Chandigarh	2013	77
12th Class	Government Model Senior Secondary School-35, Chandigarh	2009	61.5
10th Class	Shivalik Public School	2007	86.6

Training and Certifications:

Name of the Company	Duration	Course
Times Pro - IIT Guwahati	Aug 2022-May2023	Artificial Intelligence and Deep Learning
Azure Fundamentals AZ900	4months	AZ900
Var Sigma	6 Days	Lean six-sigma Black belt
A.C Nielsen	March-May 2015	Market Research
Electronics Test and Development Center , Ministry of Information and Technology	January –June 2013	Quality control, Calibration, Testing of Electronic Instruments
Centre for Development of Advanced Computing	June-July 2011	Microcontroller: Architecture, programming and interfacing

Personal Details

Date of Birth	28/08/1991
Nationality	Indian
Languages Known	English & Hindi.
Hobbies	Reading Whitepapers, Research Papers on Data Science Management, Consumer Psychology, Neuroscience, Philosophy, Quantum Mechanics writing inspiring notes, singing.

Here by I declare that all the information given above is true to the best of knowledge.

Date: 07-JULY-2024 **(Charita Bajaj)**