Bhagyalakshmi Bichchal

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Personal Summary

Data Scientist with **2+ years of experience** building end-to-end data and machine learning solutions across analytics, computer vision, and natural language processing. Strong background in **data collection, cleaning, validation, and exploratory data analysis (EDA)**, with hands-on experience developing **Deep Learning and Retrieval-Augmented Generation (RAG) systems** for real-world applications including medical image classification, document intelligence, and conversational AI. Proficient in **SQL, Python, PyTorch, Power BI, and Excel**, with a proven ability to translate complex models into **production-ready APIs, dashboards, and decision-support tools**. An effective collaborator with cross-functional teams, focused on delivering measurable impact through model performance improvements, process optimization, and clear technical documentation.

EDUCATION

Masters of Science in Computer Science (Artificial Intelligence)(Result : 2.1)
National College of Ireland, Ireland 2023-2024

Bachelors in Computer Science (Result : 9.0 GPA)
Savitribai Phule Pune University, India 2019-2022

EXPERIENCE

Duty Manager Jan 2025 - Present
Anno Santo Hotel *Remote*

- Managed KPIs, schedules, and performance reports using MS Office, advanced Excel trackers, and Slack to coordinate cross-department operations.
- Built Power BI dashboards and Excel reports to monitor performance metrics and visualize insights for management.
- Handled phone/email communications professionally, ensuring smooth collaboration across teams and departments
- Applied basic troubleshooting and data-driven problem-solving to resolve operational issues quickly.
- Developed and maintained technical documentation for workflows and procedures, improving cross-team collaboration and knowledge sharing.

Data Scientist June 2021 - Jul 2023
Webshark Web Services *Remote, India*

- Developed and fine-tuned machine learning models using PyTorch, improving lead scoring and user conversion prediction accuracy by 20–30% across client digital platforms.
- Applied Hugging Face Transformers (BERT-based models) for sentiment analysis, content classification, and keyword intent modeling, enabling data-driven SEO and marketing optimization.
- Designed scalable data preprocessing and feature engineering pipelines using Python (Pandas, NumPy), supporting analytics on high-volume web traffic and campaign datasets.
- Integrated ML outputs into business analytics dashboards and A/B testing workflows, directly influencing product and marketing decisions and improving campaign ROI by 1̃5%.
- Collaborated cross-functionally with web developers, product managers, and digital marketing teams to translate analytical insights into production-ready features and client deliverables.

SKILLS

Programming Languages: C, Java(*Standard*), Python(*Proficient*), SQL(*Standard*), MatLab, R

Data Analysis & Visualization: Power BI, Tableau, Microsoft-Excel , Pandas , Scipy , Matplotlib

Machine Learning Frameworks: Tensorflow-Keras, Pytorch , HuggingFace , Scikit-Learn

Natural Langauge Processing: NLTK, Spacy , Huggingface-Transformers

Agentic AI Development: Langchain , CrewAI , Llama-Index , Microsoft-AutoGen

Deployment & Version Control: Git , Docker , Kubernetes , Huggingface-Spaces

Research & Academic Projects

Melanoma Skin Cancer Detection using Ensemble Deep Learning , *Course Capstone Project* May 2024

Developed a melanoma skin cancer detection system using an ensemble of deep learning architectures, combining MobileNet, VGG19, and DenseNet121 to improve robustness and generalization in image classification. The ensemble-based approach effectively captured diverse feature representations from dermoscopic images, achieving an overall classification accuracy of 85%. The trained model was deployed as a production-ready application using Flask for the backend API and containerized with Docker, enabling scalable, portable, and reproducible deployment across environments

FashionTrendML: Women's Clothing Trend Analysis & Visualization , *Personal Project* July 2024

Developed FashionTrendML, a women's clothing trend analysis pipeline using Python and machine learning to model sales, review, and seasonal features. Built supervised trend-forecasting models that achieved a 20% reduction in RMSE compared to a moving-average baseline. Applied Natural Language Processing techniques (TF-IDF + sentiment classification) on customer reviews, reaching 82% F1-score, and used K-Means clustering to segment products, improving intra-cluster cohesion (Silhouette Score +0.18). Deployed insights via an interactive Power BI dashboard to support inventory planning and data-driven marketing decisions.

Retrieval Augmented Generation based PDF Summarizer Chatbot , *Personal Project* Dec 2024

Built a PDF Summarizer Chatbot with a Retrieval-Augmented Generation (RAG) architecture to enable accurate document analysis and question answering. Implemented an intelligent document processing pipeline using LangChain embeddings and the OpenAI API to chunk, embed, and index PDF content for semantic retrieval. Integrated a vector-based retrieval layer to ground responses in source documents, reducing hallucinations and improving answer faithfulness, with >90% source attribution accuracy and a 35% reduction in irrelevant responses compared to a vanilla LLM baseline.

Agentic RAG–Based Insurance Claims Assistance - CogniClaim , *National AI Challenge 2025* Sept 2025

Developed a Claims Assistance Chatbot using a Retrieval-Augmented Generation (RAG) and agentic architecture to support end-to-end insurance claims processing. The system leveraged document-grounded retrieval to guide users through claim requirements and answer policy-specific queries, achieving >90% response grounding against policy and claims documents. Implemented an agentic workflow to orchestrate multi-step tasks such as document validation, claim summarization, and rule-based checks, reducing manual review effort by 40%. Built an insurer-side dashboard to generate structured claim summaries and decision artifacts, incorporating an AI validation layer to flag missing documents and inconsistencies, improving approval/rejection turnaround time by 30%.

CERTIFICATIONS

- **Specialization** in **Data Visualization with Tableau** from Coursera offered by **UC Davis**. Jul 2022
- **Specialization** in **Hands-on Machine Learning with Google Cloud Labs** from Coursera offered by **Google**. Jul 2022
- **Professional certificate** in **AI engneering** from Coursera offered by **IBM**. Oct 2021
- **Professional certificate** in **Data Science** from Coursera offered by **IBM**. Sep 2021
- **Specialization** in **AWS Fundamentals** from Coursera offered by **AWS**. Aug 2021
- **Certification** in **Algorithms, Part I** offered by **Princeton University** from Coursera. Jun 2021

REFEREES

References Available Upon Request