Bharat Singh Parihar

+91 9451747691 | bharat3645@gmail.com | GitHub | LinkedIn | Portfolio

SUMMARY

Data Science undergraduate with a strong foundation in fraud detection, risk modeling, and intelligent automation. Proven experience in building and deploying end-to-end machine learning solutions using Python, R, SQL, and modern AI stacks. Specializes in Retrieval-Augmented Generation (RAG), Agentic AI systems, LangChain, LlamaIndex, and Federated Learning to tackle real-world problems in finance, security, and healthcare. Adept in cross-functional collaboration, KPI tracking, and model deployment on huggingface with MLOps Concepts.

EDUCATION

Symbiosis Institute of Technology **-Nagpur, India**
B.Tech.(Hons.) CSE Core Data Science *CGPA: 7.65/10.00 (2026)*

Kendriya Vidyalaya **- Dahi Chowki, Unnao**
SSC, PCM with Computer Science *Percentage: 87.44% (2022)*

SKILLS

Programming & Tools: Python, R, SQL, JavaScript/TypeScript, C++, Scala, Java, Flutter, React, Node.js, Streamlit, Flask, FastAPI
AI/ML: TensorFlow, PyTorch, Keras, Scikit-learn, YOLOv8, OpenCV, PyCaret, Pandas, NumPy, Seaborn, NLTK, SpaCy, ImageMagick, CNN, RNN, GAN, LSTM
Modern AI Systems: LangChain, LlamaIndex, RAG pipelines, Vector DBs (FAISS, Pinecone), Agentic AI, GraphRAG, LangGraph, AutoRAG, Text-to-SQL
Visualization: PowerBI, ggplot2, matplotlib, seaborn, Excel, Dash
Cloud & DevOps: AWS, GCP, Firebase, Docker, Kubernetes, Git, GitHub, UNIX Shell
Databases: PostgreSQL, MySQL, Firebase, Neo4j

PROFESSIONAL EXPERIENCE

PGDAV College – University of Delhi | Summer Research Intern **May 2024 – July 2024**
- Developed a CNN-based deep learning model for real vs. fake face distinction, achieving 95% accuracy.
- Integrated Multi-Criteria Decision-Making (MCDM) for enhanced decision precision.

Kodacy | Student Intern **Jan 2023 – Feb 2023**
- Conducted simulations to guide robotic prototyping, improving efficiency by 15%.

PROJECTS

GraphRAG Research Assistant | *LangChain, LangGraph, Neo4j, OpenAI, RAG, PyMuPDF* *Feb 2025 – Present*
- Developed an AI assistant using GraphRAG and LangGraph to enable multi-hop reasoning over PDFs and tabular datasets.
- Boosted factual accuracy and retrieval speed by 4x vs. baseline RAG systems using Neo4j knowledge graphs.

Federated Learning for Anomaly Detection | *FedML, TensorFlow Federated, TLS, scikit-learn* *Oct 2024 – Jan 2025*
- Built a privacy-preserving fraud detection pipeline using TensorFlow Federated across edge devices.
- Achieved 91% detection accuracy, aiding KPI tracking for distributed IoT-based financial systems.

AI-Driven Image Encryption | *LSTM, GAN, SRDNN, NumPy, Matplotlib* *Jul 2024 – Sep 2024*
- Engineered a self-adaptive encryption algorithm outperforming AES-256 in processing time.
- Tailored for healthcare and IIoT environments with zero image fidelity loss.

Resume Feedback Agent | *LangChain, OpenAI, Pinecone, FAISS, Streamlit* *Apr 2024 – Jun 2024*
- Built an agentic AI system for parsing resumes and providing personalized feedback.
- Leveraged vector embeddings and FAISS for real-time document retrieval.

Brain Tumor Detection | *YOLOv8, PyTorch, Docker, OpenCV, Self-Annotation* *Jan 2024 – Mar 2024*
- Designed and deployed a deep learning model for MRI analysis with 89% precision.
- Integrated Docker for scalable deployment and reduced false positives by 15%.

Medical Insurance Cost Prediction | *R, Shiny, glmnet, randomForest, ggplot2* *Oct 2023 – Dec 2023*
- Deployed an ensemble regression model with RMSE of 300 and R^2 of 0.85.
- Visualized and presented KPI metrics using Shiny dashboards and ggplot2.

Book Detection for Visually Impaired | *Python, OCR, OpenCV, pyttsx3, TTS* *Jun 2023 – Aug 2023*
- Created a real-time OCR-based tool converting physical book text into speech using pyttsx3 and OpenCV.
- Improved accessibility and performance by 30% over traditional TTS tools.

ACHIEVEMENTS

AWARDS

1) 🥇 **Winner,** Web 3.0 Hackathon, BITS Pilani *2025*
2) 🏅 **4th Place**, CyberHack Maha Hackathon *2025*
3) 🥇 **Winner**, GDSC Hackathon *2023*
4) 🥉 **3rd Place**, IEEE Research Hackathon *2023*

PUBLICATIONS

[1] B. S. Parihar, et al., **Integration of Computer Vision for Book Detection and Text-to-Speech Conversion**, IEEE ICISCT 2024, Kookmin University, Korea (SCOPUS)
[2] B. S. Parihar, et al., **The Impact of Digitalization on Psychological Treatment**, IEEE ICISCT 2024, Kookmin University, Korea. (SCOPUS)
[3] B. S. Parihar, et al., **Realtime Cryptojacking in Advanced mobile devices,** IEEE ICPCT 2025, Amity University, Noida, India. (SCOPUS)
[4] B. S. Parihar, et al., **Revolutionizing Industry 4.0: Multi-Level Federated Learning for Dynamic Ecosystem** – (Book Chapter) 2025
[5] B. S. Parihar, et al., **AI and Forecasting for Renewable Energy Generation** – (Book Chapter) 2025

CERTIFICATIONS

- Fundamental of Deep Learning **~NVIDIA**
- Fundamental of Accelerated Computing with Cuda C **~NVIDIA**
- Cloud Data Engineer **~Google**
- Accelerating CUDA C applications with Multiple GPUs **~NVIDIA**
- SQL (Basic, Intermediate, Advance) **~HackerRank**
- SDE Intern **~HackerRank**
- Machine Learning Specialization **~Stanford University**
- Cloud Foundations and Cyber Security Foundations **~Amazon AWS**
- Certified System Administrator **~ServiceNow**
- Certified Application Developer **~ServiceNow**

LEADERSHIP EXPERIENCE

Computer Society of India (CSI) Student Chapter
Chair *Dec 2024 – May 2025*

SITNovate 24 Hours Hackathon
Organizer *19, 20 Feb 2025*

Computer Society of India (CSI) Student Chapter
Founder Vice Chair *July 2024 - Nov 2024*

IEEE Student Chapter
Core Member *Dec 2023 - Jun 2024*

LANGUAGES

1) **English (Fluent)**
2) **Hindi (Native)**
3) **Spanish (Basic)**

REFERENCES

Dr. Sudhanshu Maurya
Associate Professor & Research Head, SIT Nagpur
Symbiosis International (Deemed University), Pune, India
dr.smaurya3feb@gmail.com

Prof. Dr. Geeta Aggarwal
Professor, Department of Computer Science, PGDAV College, Delhi University, Delhi, India
geeta.gupta@pgdav.du.ac.in