

GARGI CHAKRABORTY

Kolkata, India | 8617769412 | [Gmail](#) | [LinkedIn](#) | [Portfolio](#) | [GitHub](#) | [Google Scholar](#)

Proficient in AI/ML with a background in Computer Science Engineering. Hands-on experience in Python, C, C++, HTML5, Tailwind CSS, JavaScript, and MySQL. Domain expertise in Natural Language Processing, Machine Learning, Deep Learning, Computer Vision, Generative AI and Data analytics and Visualization. Honing strong analytical skills, decision-making, problem-solving abilities, with a learning mindset and proactive approach.

TECHNICAL SKILLS

• Python	• C	• C++	• HTML5
• Tailwind CSS	• JavaScript	• MySQL	• Natural Language Processing
• Machine Learning	• Deep Learning	• Computer Vision	• Generative AI
• OpenCV	• TensorFlow	• Keras	• NumPy
• Pandas	• Matplotlib	• Seaborn	• PyAudio
• PyTorch	• MS Excel	• LLMs	• Technical Content Writing
• RAG	• LlamaIndex	• LangChain	• LaTeX

WORK EXPERIENCE

Generative AI Intern | *Code4x* | *September 2024 – Present*

- Conducting research on different Generative AI-based technologies, training different LLM models with different embedding techniques, RAG, no-RAG, Langchain, LlamaIndex, LangSmith, AutoGen, Dify, Graph Databases, writing articles on these topics.

Tools learning: Python, LLMs, RAG, AutoGen, DSPy, Dify, Pinecone, Milvus, Weaviate, Neo4j, postgresql, elasticDB

AI Research and Development Intern | *University of Calcutta (AKCSIT)* | *December 2023 – September 2024*

- Conducted research on AI-based technologies, contributing to publications in areas like *NLP, Deep Learning, Cloud Computing, Pattern Recognition and AI-based advancement techniques*.
- Worked on *End-to-End Optical Character Recognition for Bengali Handwritten Words Using Custom EfficientNet*. It focuses on improving accuracy in recognizing complex Bengali scripts through deep learning techniques tailored for OCR tasks.

Tools used: Python, TensorFlow, Keras, NumPy, Matplotlib, Seaborn, Pattern Recognition Techniques, DNN, CNN, EfficientNet

PROJECTS

AI-Based Integrated Framework for Motion Activated Facial Recognition | [GitHub](#)

- Developed an integrated facial recognition framework designed to enhance road safety by detecting driver drowsiness, alcoholic possibilities and impairment with a 3 stages alert system. This system uses AI algorithms to analyze facial expressions and movements for fatigue detection only using a camera and provides alerts in 3 different stages.

Tools: Python, OpenCV, Sentiment Analysis, Speech Recognition, Own Hybrid Model (CNN+DNN+YOLOv7)

Doctor Appointment Booking System | [GitHub](#)

- Created a text file-based, database-free doctor appointment booking system using Python Flask.

Tools: Python, Flask, HTML5, CSS, JavaScript

FauxShield – Deepfake Detection Platform | [GitHub](#)

- Developed a comprehensive and integrated platform to detect deepfake audios, videos, and images using advanced machine learning algorithms.

Tools: Python, CNN, TensorFlow, PyAudio, Error Level Analysis, HTML5, CSS, JavaScript

Kanoon Mitra – AI-Based Legal Assistant | [GitHub](#)

- Developed a legal assistant that simplifies legal information using NLP, making it accessible for general users in multiple Indian languages to retrieve legal data and understand complex concepts.

Tools: Python, Natural Language Processing, Google Maps (Graphs)

Dynamic Function Scheduling in Multi-tenant Serverless Environments | [GitHub](#)

- The project focuses on optimizing resource utilization and application performance within a serverless cluster of virtual machines (VMs). By leveraging Graph Neural Networks (GNNs) for availability prediction, it enables time-aware analysis, community discovery, and dynamic pattern identification for efficient resource management, improving scalability and reducing prediction latency through advanced graph representation and dependency modeling.

Tools: Python, TensorFlow, Keras, Graph Neural Networks (GNNs), Virtual Machines (VMs), Cloud Computing Architecture.

PAPERS AND PUBLICATIONS

- AISC 2024 – *End-to-End Optical Character Recognition for Bengali Handwritten Words Using Custom EfficientNet* | Accepted
- ICIDA 2023 – *An AI-Based Integrated Framework for Motion Activated Facial Recognition* | [Published](#)
- Wiley Book Chapter – *Evaluating the Readability of English Language Using Machine Learning Models* | [Published](#)
- Wiley Book Chapter – *Image Enhancement Techniques to Modify an Image for Machine Learning Applications* | [Published](#)
- Wiley Book Chapter – *IoT-Based Health Monitoring Using a Hybrid Machine Learning Model* | [Published](#)
- Wiley Book Chapter – *HDRL-Hybrid Deep Reinforcement Learning Approach for Dynamic Malware Analysis* | Accepted
- CRC Book Chapter – *Empowering Edge-Enabled Resource-Efficient Collaborative Deep Learning over B5G/6G Networks* | Accepted

PATENTS

- First Author: *"A Legal Chatbot Using Natural Language Processing- Kanoon Mitra"* | Application No: 202331049760 A | [Published](#)
- Eighth Author: *"Chakravayuh: An AI-Based Crime Prevention System"* | Application No: 202331049753 A | [Published](#)

EDUCATION

Bachelor of Engineering in Computer Science (AIML) | *Aggregate (till Semester VI): 90.20%* | Aug 2021 – Present

Brainware University, West Bengal

CERTIFICATIONS

- "Building Your First RAG System Using LlamaIndex" | Analytics Vidya | [Check](#)
- "Introduction to Generative AI" | Google | [Check](#)
- "Introduction to LLMs" | Google | [Check](#)
- "Introduction to Machine Learning" | Infosys | [Check](#)
- "Introduction to Data Science" | Infosys | [Check](#)
- "Machine Learning Implementation" | Skillssoft | [Check](#)
- "Mastering Data Structure & Algorithms using C and C++" | Udemy | [Check](#)

ACHIEVEMENTS AND PARTICIPATIONS

- Finalist (7th Position) in CODESPIRE 2023, National Level Hackathon, Acropolis Institute of Technology, Indore
- Finalist (5th Position) in KLEOS 2.0, National Level Hackathon, D.Y. Patil University, Mumbai
- Nominated for YUKTI Innovation Challenge 2023
- Participated in Smart India Hackathon (SIH) 2023
- Participated in MSME Idea Hackathon 2022
- Participated in Elechthon 2023
- Attended DST, West Bengal Workshop 2023