

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

<ul style="list-style-type: none">PythonTailwind CSSMachine LearningOpenCVPandasPyTorchRAGAWS ECRGraph DatabasesJira	<ul style="list-style-type: none">CJavaScriptDeep LearningTensorFlowMatplotlibMS ExcelLlamaIndexAWS SAM CLILangSmithPyTest	<ul style="list-style-type: none">C++MySQLComputer VisionKerasSeabornLLMsLangChainPostgreSQLAbacus AIAI Agents	<ul style="list-style-type: none">HTML5Natural Language ProcessingGenerative AINumPyPyAudioChromaDBLaTeXDockerAPI HandlingModel Context Protocol (MCP)
---	---	---	---

WORK EXPERIENCE

Tech Intern | [Campus Ready](#) | February 2025 - Present

- Conducting research and developing cutting-edge innovative technologies to simplify learning process and exam preparations. Working on advanced level pdf extraction techniques. Working on vector databases in depth.

Tools used: Python, AWS Sagemaker, Bedrock, API handling, machine learning, Prompt tuning, LLMs, ChromaDB, deep learning models, PDF extraction techniques

AI Intern | [Palcode.ai](#) | December 2024 – February 2025

- Worked on an automated RFI analysis and assignment system using Python and machine learning tools and techniques. Designed predictive models for resolution time and optimized SQL queries for performance scoring, achieving confidence levels of **70–100%**.

Tools used: Python, AWS ECR, AWS CLI, AWS, SAM CLI, Docker, Procure, POSTMAN API, RFI analysis, sentiment scoring and assignments using PostgreSQL, machine learning

Generative AI Intern | [Code4x](#) | September 2024 – February 2025

- Worked on Gen AI Driven ATS ([Hire4X](#)) and Assessment Platforms ([Evalify-IQ](#)). This is AI based automated resume screening to the Robotic Interview Agent that automates the interview process to cut down recruiter, hiring manager and interviewer effort drastically.

Tools used: Python, LLMs, RAG, Langchain, Langsmith, Vector Databases, POSTMAN API

- 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 – December 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

- ICDMAI 2025 – **Quantum Convolutional Neural Networks for Enhanced Crop Disease Detection and Management: A Step Towards Intelligent Farming Systems** | Accepted
- 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](#)
- CRC Book Chapter – **Empowering Edge-Enabled Resource-Efficient Collaborative Deep Learning over B5G/6G Networks** | [Published](#)
- Wiley Book Chapter – **HDRL-Hybrid Deep Reinforcement Learning Approach for Dynamic Malware Analysis** | 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

- Career Essentials in Generative AI by Microsoft and LinkedIn | LinkedIn | [Check](#)
- MACHINE LEARNING ENGINEER CERTIFICATE | Pro5.ai | [Check](#)
- Foundations of Model Context Protocol | Analytics Vidya | [Check](#)
- Framework to Choose the Right LLM for your Business | Analytics Vidya | [Check](#)
- 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 | Skillsoft | [Check](#)
- Mastering Data Structure & Algorithms using C and C++ | Udemy | [Check](#)
- Build a free website using WordPress | Coursera | [Check](#)

ACHIEVEMENTS AND PARTICIPATIONS

- Finalist (5th Position) in KLEOS 2.0 2024, National Level Hackathon, D.Y. Patil University, Mumbai
- Finalist (7th Position) in CODESPIRE 2023, National Level Hackathon, Acropolis Institute of Technology, Indore
- Participated in Bootcamp on Unmanned Aerial Systems & Related Technology, organized by the NIT Durgapur in collaboration with MeitY and Swayaan 2024
- Nominated for YUKTI Innovation Challenge 2023
- Participated in Smart India Hackathon (SIH) 2023
- Participated in MSME Idea Hackathon 2022
- Participated in Electhon 2023
- Participated DST, West Bengal Workshop 2023