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

WORK EXPERIENCE

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

- 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: ***"Chakravyuh: 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

- **"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**

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 Electhon 2023
- Attended DST, West Bengal Workshop 2023