DEBOJYOTI BHUINYA

Kolkata, India | 8582829379 | Gmail| LinkedIn| Portfolio| GitHub| Google Scholar

Passionate AI/ML B. Tech student, skilled in programming, data analysis, algorithms. Eager to innovate, solve challenges, and learn in a dynamic tech environment.

TECHNICAL SKILLS

- Python
- C
- C++
- HTML5
- Tailwind CSS
- JavaScript
- Java
- Natural Language Processing
- Machine Learning
- Deep Learning
- Computer Vision
- Generative AI
- OpenCV
- TensorFlow
- Keras
- NumPy
- Pandas
- Matplotlib
- Seaborn
- PyAudio
- PyTorch
- Android Studio
- LLMs
- Arduino IDE
- RAG
- Quantum Machine Learning
- LangChain
- LaTeX
- MATLAB
- Computer Networks
- NodeJS
- MongoDB
- Express JS
- PHP
- AJAX
- Gradio
- React JS
- Sentiment Analysis
- SQLite
- IoT and Automation
- Networking
- TCP/IP communications
- Kali Linux
- MySQL
- Postman API
- FastAPI
- Langchain
- Huggingface

WORK EXPERIENCE

Data Scientist Intern| *Databae Technologies LLP* | *July 2024 – Present*

- Conducting research and develop models on latest deep learning technologies. Deploying models on public platforms and inferring it using APIs. Enable mobile applications to use those models.

  Tools learning: Python, Gradio, Docker, Hugging Face, MERN Stack, Pyannote Audio, NVIDIA Nemo, YOLOv8, SpaCy.

AI Research and Development Intern| *University of Calcutta (AKCSIT)| July 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 ***Evaluate Lip Reading using Deep Learning Techniques***. It focuses on predicting letters and words by analyzing lip movements. It uses CNN for temporal analysis, Bi-directional LSTM for sequential analysis.

  Tools used: Python, TensorFlow, Keras, NumPy, Matplotlib, Seaborn, CNN, Time distributed flatten, Bi-directional LSTM
- 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 Automated System for Watershed Management and Water Monitoring in Irrigation | GitHub

- Developed a cutting-edge technology designed to enhance Watershed management in Irrigation field. Leveraging artificial intelligence (AI) algorithms, this framework analyzes Soil moisture and Water availability to identify signs of dry soil or water deficiency to pump water to field from the best available water source.

  Tools: Python, Arduino IDE, HTML, CSS, JavaScript, Apache Server, Automation, IoT Sensors (Arduino Micro Controller, 4-Channel Relay, Soil Moisture Sensors, DHT Sensors etc), Micro-controller Programming

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, Natural Language Processing, LLMs.

Software for 3d modeling of Carbon resistance in Aluminum Ore Industry

- This project involves the development of a server-based system designed to represent the resistance histogram of carbon electrodes, which are critical in the aluminum ore extraction process. Utilizing the 4-probes method for precise resistance measurement, the system ensures accurate data acquisition and analysis.

  Tools: Python, Machine Learning, Statistics, Interpolation and Extrapolation Techniques, PHP, CSS, JavaScript.

Android Application for Skin Phenotype Detection| GitHub

- This project involves the development of a dedicated android application to take photo and detecting the skin phenotype (Dry, Oily, Normal) along with the skin moisture level. Utilizing the self-developed ML Algorithm (Patented) for precise detection, the application ensures accurate data acquisition and analysis

  Tools: Android Studio, Machine Learning, Statistics, Quantitative Analysis, Computer Vision, Image Processing.

PAPERS AND PUBLICATIONS

- ICACIE 2022 - ***Music Recommendation System based on Emotion Detection using Heart Rate and Stress Index (Extended)*** | Published
- ICCRET 2022 - ***Music Recommendation System based on Emotion Detection using Heart Rate and Stress Index*** | **Accepted and Presented**
- AISC 2024 – ***End-to-End Optical Character Recognition for Bengali Handwritten Words Using Custom Efficient-Net*** | **Accepted and Presented**
- ICSTA 2023 – ***Evaluate Lip Reading using Deep Learning Techniques*** | **Accepted and Presented**

PATENTS

- First Author - ***"A Smart Soil Moisture Sensor and Watering System for Smart Agriculture and Method Theorem"*** | ***Application No: 202331049755 A*** | Published
- Fifth Author - ***"An AI Based System to Detect Different Skin Phenotypes and Moisture Levels"*** | ***Application No: 202231068125 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**
- **"Introduction to Machine Learning and Supervised Learning" | Skillsoft | Check**
- **"Machine Learning Implementation" | Skillsoft | Check**

ACHIEVEMENTS AND PARTICIPATIONS

- 2nd Runners-up in Intel Unnati Grand Challenge 2022 organized in collaboration with IISc Bangalore.
- Finalist among 600 teams in KLEOS 2.0 – 36-hours National Level Hackathon in Ramrao Adik Institute of Technology, D. Y. Patil Deemed to be University, Nerul, Navi Mumbai 2024.
- Nominated for YUKTI Innovation Challenge 2023.
- Participated in Department of Science and Technology (DST), West Bengal workshop 2023.
- Participated in Electhon 2023.
- Participated in Smart India Hackathon 2023.
- Participated in international conference on Entrepreneurship - Global Entrepreneurship Summit (G. E. S) 2023 held in IIT Kharagpur.