ARPANENDU KHAG

Assistant ML Engineer

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ABOUT ME

Innovative and detail-oriented AI/ML Engineer with hands-on experience in deep learning, full-stack development, and data engineering. Proven track record in architecting advanced models for cybersecurity applications, optimizing data pipelines, and developing scalable web solutions. Adept at applying Python, SQL, and modern AI frameworks (PyTorch, TensorFlow, Keras) to deliver high-impact, performance-driven solutions. Skilled in collaborating across cross-functional teams, leading technical initiatives, and driving measurable improvements in system performance and efficiency.

EDUCATION

B.TECH IN COMPUTER SCIENCE ENGINEERING   2021-2025
Dr. B.C. Roy Engineering College, Durgapur

HIGHER SECONDARY EDUCATION [PCM(CS)]   2019-2021
D.A.V Public School, ECL-Pandaveswar, Paschim Bardhaman

SKILL

- **Language:** Python • C • Java   **Developement:** HTML/CSS • Javascript
- **Databases:** MongoDB • PostgreSql • SQL • SQLite
- **Libraries & Frameworks:** NumPy • Pandas • Scikit-learn • PyTorch • TensorFlow • Keras • Matplotlib • Seaborn
- **TOOLS:** VSCode • Git/Github • Teams • Slack • MLFlow • Streamlit • Vercel • Figma • Canva • Power BI • Notion

WORK EXPERIENCE

Capsitech Technologies – Assistant ML Engineer - L1   **JUN 2025 – PRESENT**

Architected and validated an advanced **BiLSTM deep learning mode**l for **detecting and classifying email spoofing/phishing threats.** Achieved high accuracy through rigorous benchmarking using Precision, Recall, F1-score, and AUC-ROC, and confirmed **robustness via cross-dataset validation.**

DiMark-AI – Software Development Intern   **Jun 2024 – May 2025**

Developed and integrated key full-stack features, including payment API integration. **Optimized SQL queries to improve dashboard loading times by 15%**.

Celebal Technologies – Data Engineering Trainee (COE Program)   **May 2024 – Aug 2024**

Built and automated **data processing pipelines using Python (Pandas) and SQL**. Reduced manual processing by **5 hours** weekly through an automated aggregation script.

Google Developer Groups – Durgapur – Graphics Team Lead & Web Developer   **Sept 2022 – PRESENT**

Led the chapter's **visual content creation** and **developed the official website**. **Collaborated with event organizers** to maintain consistent brand identity and **boost community engagement**

PROJECTS

Doctor AI – Healthcare Chatbot   **LINK**

An AI-powered virtual medical assistant that interacts with users through text and voice to provide basic healthcare advice, preliminary symptom analysis, and appointment guidance. Built using **NLTK, TensorFlow, and speech recognition, it processes natural language queries and responds in real-time**.

- **Usage:** Helps patients get instant, accessible medical information, reducing the burden on healthcare professionals and improving initial diagnosis efficiency.

Sanket – The Voice of Unheard   **LINK**

A real-time sign language detection and translation system that converts sign gestures into text and vice versa. Implemented using **Teachable Machine, TensorFlow.js, Keras, and OpenCV for gesture recognition**.

- **Usage:** Bridges the communication gap between the hearing-impaired and others, enabling inclusive communication in education, workplaces, and public services.

Voice Assistance   **LINK**

A sophisticated voice-controlled assistant developed in Python, leveraging speech recognition and natural language processing (NLP) to interpret and execute user voice commands. It can perform tasks such as searching the web, opening applications, reading out information, and automating basic system operations.

- Usage: Enhances hands-free computing by enabling users to interact with their devices via voice, improving accessibility, productivity, and convenience for both everyday users and individuals with physical limitations.

ACHIEVEMENTS & CERTIFICATES

- **#2 at Arohan (2023): NIT DGP**
- **#2 at INNO VENTURE EXPO (2024): CSI-BCREC**
- **Python (Basic) HackerRank Certificate**
- **SQL (Basic & Intermediate) HackerRank Certificate**
- **Power BI & Business Intelligence**