Debajyoti Chakraborty

linkedin.com/in/debajyoti-c1

Email : debajyoti.chakraborty16@gmail.com
Mobile : +1-857-272-9989

EDUCATION

Northeastern University — Boston, MA
Master of Science in Computer Science; GPA: 3.9 — *August 2021 – December 2023*

Netaji Subhash Engineering College — India
Bachelor of Technology in Computer Science & Engineering — *August 2014 – November 2018*

EXPERIENCE

Bose — Framingham, MA
Data Engineer — *January 2024 – Present*
- **AWS SAM**: Build and design ETL pipelines, spanning from data acquisition to ML model deployment and monitoring.

UBS Asset Management — Chicago, IL
Quantitative Developer — *July 2022 – January 2023*
- **Multi-Factor Investing Tool**: Constructed a factor investing tool to improve weekly investment positioning in government bonds. Collected feedback from cross-functional teams and presented results using Tableau reports.
- **Performance Forecasting App**: Identified and fixed data discrepancies in FI division's factor forecasting web app. Spearheaded a 20% increase in forecasting accuracy and improved quarterly performance metrics.

Northeastern University — Boston, MA
Graduate Teaching Assistant — *May 2022 – July 2022*
- **CS 3500 : Object-Oriented Design**: Facilitated group discussions, graded assignments, and conducted office hours for teaching OOP concepts to 100+ students.

Freelance — Remote
Software Engineer — *November 2019 – June 2021*
- **COVID-19**: Organized a team of engineers amidst the pandemic to facilitate cloud adoption for local small businesses.
- **Aid for impacted industries**: Focused on assisting primarily 'offline' enterprises such as textile, hospitality and medical establishments, extending support for essential functions like security, logistics and inventory management.

Tata Consultancy Services — India
Software Engineer — *October 2018 – October 2019*
- **Cloud Migration**: Migrated a client's legacy medical devices platform from on-premises to AWS, enabling multi-tenancy. Followed serverless best practices and orchestrated layers using IaC to deploy highly scalable systems.
- **Semantic Document Search Engine**: Designed and implemented a document search engine for 50+ SOPs. Programmed an automatic support ticket scheduling system, thus reducing ticket resolution time by 75%.
- **Ticket Resolution Chatbot**: Led a team of 2 engineers in developing conversational AI to automate IAM requests. Trained on 10,000+ rows of support requests and conversation logs.
- **Client Team Coordination**: Managed a client's PLM team by organizing daily standups and scrum meetings. Coordinated with QA and DevOps team to fix bugs and rapidly deploy cloud solutions.
- **Robotic Process Automation**: Transitioned RPA tasks to Beautiful Soup and Selenium, reducing costs by 50%.

Hungry Bulb — India
Research and Development Engineer — *November 2016 – April 2017*
- **Multi-room Wireless Speaker**: Crafted and produced a 3D-printed Wi-Fi + BLE speaker with an Android app.

PROJECTS

- **ProFoundPDF: Chat with PDFs**: Built chat interface to segment multiple PDFs and created vector store using OpenAI's embedding model. Integrated GPT-3.5-turbo and implemented RAG to generate context-aware responses.
- **Fine-tuning BERT**: Conducted ablation studies by fine-tuning BERT using HellaSwag, a MCQA dataset to reproduce benchmark results. Demonstrated 12% degradation in performance with varying context, indicating a strong bias in transformer models.
- **Decentralized Chat**: Leveraged RMI to implement a distributed and encrypted peer-to-peer messaging app. Upgraded with group chat, vector-clock synchronization, fortified with Paxos consensus algorithm for fail-safety.
- **Breast Cancer Detection**: Compared popular classification methods with a Single View Single Lateral (SVSL) model for testing on a Kaggle competition dataset by RSNA, yielding an average validation case pF1 score of 0.56 across methods.
- **RL in MuJoCo: Continuous control**: Evaluated performance of AI/ML models like State–Action–Reward–State–Action (SARSA) and Q-learning (value-based), alongside DDPG, through comprehensive benchmarking.
- **3D TD-U-Net**: Proposed novel approach of using time-distributed (TD) architecture for U-Nets to segment multi-modal tumors from volumetric brain 3D MRI scans across 3 modalities with 0.58 testing DICE score in under 500ms.

TECHNICAL SKILLS

- **Languages:** Python, R, JavaScript, SQL, NoSQL, Java. **Technologies:** AWS, REST API, Docker, Snowflake, PyTorch.