Debajyoti Chakraborty

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EXPERIENCE

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

UBS Asset Management — Chicago, IL
Quantitative Developer — *July 2022 – January 2023*
- Developed a factor investing tool utilizing R with dplyr, tidyr, and ggplot2 to optimize weekly investment strategies in government bonds. Gathered insights from cross-functional teams and presented outcomes via Tableau reports.
- Resolved data discrepancies within the Fixed Income (FI) division's performance forecasting web app using JavaScript, Jinja2, Flask, and Microsoft SQL Server, resulting in a substantial 20% enhancement in accuracy and improved quarterly metrics.

Northeastern University — Boston, MA
Graduate Teaching Assistant — *May 2022 – July 2022*
- Led group discussions, graded assignments, and conducted office hours to educate over 100 students on OOP concepts.

Freelance — Remote
Software Engineer — *November 2019 – June 2021*
- Orchestrated a team of engineers during the pandemic to drive cloud adoption for local small businesses.
- 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*
- Oversaw the migration of a client's legacy medical device complaint handling platform from on-premises to AWS, enabling multi-tenancy. Followed serverless best practices and orchestrated layers using IaC to deploy highly scalable systems.
- Engineered a document search engine for over 50 SOPs and SLAs utilizing Django, NLTK, OpenCV, and Tesseract-OCR. Implemented an automated support ticket scheduling system, leading to a 75% reduction in resolution time.
- Directed a team of 2 engineers to develop conversational AI using jQuery, Bootstrap, ChatterBot, and MongoDB, automating Identity and Access Management (IAM) requests through analysis of 10,000+ support requests and conversation logs.
- Managed a product lifecycle management (PLM) team by coordinating daily standups and scrum meetings. Collaborated with Quality Assurance (QA) and DevOps teams to address issues and expedite cloud solution deployment.
- Transitioned RPA tasks to Beautiful Soup and Selenium, reducing costs by 50%.

Hungry Bulb — India
Research and Development Engineer — *November 2016 – April 2017*
- Designed and manufactured a Bluetooth Low Energy (BLE) 3D-printed wireless speaker alongside an Android (Java) app.

EDUCATION

Northeastern University — Boston, MA
Master of Science in Computer Science; GPA: 3.9 — *August 2021 – December 2023*
- **Coursework**: Programming Design Patterns and Paradigms, AI for Human-Computer Interaction, Foundations of AI, Machine Learning, Scalable Distributed Systems, Deep Learning.

Netaji Subhash Engineering College — India
Bachelor of Technology in Computer Science & Engineering — *August 2014 – November 2018*
- **Coursework**: Data Structure & Algorithm, Data Base Management System, Software Development Life Cycle.

PROJECTS

- **ProFoundPDF: Chat with PDFs**: Built chat interface to segment multiple PDFs and created a 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.

TECHNICAL SKILLS

- **Programming Languages:** : C, Java, Python, R, HTML/CSS, TypeScript, SQL, NoSQL
- **API & Databases/Storage:** : REST API, S3, RDS, PostgreSQL, DynamoDB, MongoDB, Snowflake
- **Amazon Web Services:** : EC2, Lambda, Step Functions, SQS, CloudFront, Route 53, Cognito, STS, SES, ECS, ECR, Glue
- **Other Tools and Technologies:** : GitHub CI/CD, Docker, dbt, Databricks, Airflow, Azure AD, Power Apps, Jira
- **Certifications:** : OCA - Java SE 8 Programmer, IBM - Applied AI with Deep Learning