

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
 - Aano – Anonymous Location:** Created an end-to-end secure location-sharing platform facilitating real-time updates with one-click dynamic link generation, eliminating the need for viewers to sign up or download any application.
- 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.
- SBI - Automate for Bank:** Designed a secure mobile banking app for SBI with modernized login via face recognition, scanning and submitting mandate forms/cheques, with automatic signature matching, and verification with over 94% overall accuracy.
- Phototron - IITG Techniche:** Created an autonomous robot that tracks and catches balls while they fall through an incline.

TECHNICAL SKILLS

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