

EDUCATION

Northeastern University | Boston, MA*Master of Science in Information Systems***Expected May 2027****Mumbai University | Navi Mumbai, India***Computer Engineering***May 2023**

SKILLS

Programming: Python, C, C++, SQL, HTML, CSS, JavaScript, Flutter, Git, GitHub, Streamlit, Flask, React, Node.js, TypeScript, Object-Oriented Programming (OOP)

Databases & Data Systems: MySQL, PostgreSQL, MongoDB, SQLite

Machine Learning & AI Techniques: LLMs, Generative AI, Retrieval-Augmented Generation (RAG), Hybrid AI Systems, LangChain, Groq, OpenAI, Hugging Face, Transformers, Vector Database, Machine Learning Models, Model validation, Data Preprocessing, Evaluation Pipelines, Statistical Analysis, TensorFlow, Scikit-learn

Design Tools: Figma, Canva

Productivity Tools: Microsoft Excel, Word, PowerPoint, Microsoft Office Suite

Soft Skills: Analytical Thinking, Communication, Cross-Functional Collaboration, Problem Solving

PROFESSIONAL EXPERIENCE

Software Engineer | Larsen & Toubro Infotech (LTI) and Mindtree, Mumbai, India**Sep 2023 – Sep 2025**

- Contributed to a React-based support platform for a global healthcare client, implementing client-driven features and improving UI performance.
- Worked closely with backend and QA teams to integrate REST APIs, resolve defects, and support production releases.
- Designed and implemented proof-of-concept Generative AI solutions for personalized information retrieval and decision-support workflows.
- Evaluated and experimented with LLM-based solutions, focusing on prompt design, response quality, and feasibility for enterprise healthcare use cases.

PROJECTS

AI Lab Report Interpreter – Python | Flask | LLMs | RAG**Nov 2025**

- Designed a Retrieval-Augmented Generation (RAG) system to analyze clinical lab reports and extract structured medical insights.
- Conducted controlled evaluation of model accuracy using test datasets and documented findings for reproducibility.
- Built visualizations (force-directed graphs, tables) to support interpretation of lab-to-material relationships and improve clinical decision-making.

Computer System Validation – Python | Flask | React | Groq LLM**March 2025**

- Built a Generative AI platform to automate computer system validation document creation and review.
- Integrated FAISS-based retrieval and LangChain RAG pipelines for context-aware access to regulatory and validation records.
- Evaluated system reliability using test datasets, golden samples, and performance metrics to detect model drift.

Healthcare Prior Authorization – Python | Flask | React | Azure OpenAI**Dec 2024**

- Developed an AI-assisted workflow to automate the evaluation of patient insurance claims for prior authorization.
- Enabled secure upload and processing of patient medical histories, generating concise summaries using FAISS-based indexing and OpenAI embeddings.
- Created an interactive chat interface powered by contextual LLM retrieval, enabling reviewers to query CPT-based clinical details for claim decisions.

End-to-End Visualizations – React.js | Node.js | MongoDB**May 2024****Client: Johnson & Johnson**

- Built an interactive React.js dashboard with real-time charts and KPI visualizations for monitoring business process flows.
- Consumed Node.js + MongoDB APIs to render reliable, real-time data views and track failure scenarios for faster issue resolution.
- Designed reusable UI components and a user-friendly interface to improve navigation, scalability, and overall user adoption.

AAMC Knowledge Chatbot – Python | RAG | FAISS | Azure OpenAI**July 2024**

- Built a document-grounded AI chatbot using hybrid retrieval (FAISS) and LLM generation to answer queries from AAMC academic PDFs.
- Designed structured conversational responses entirely from pre-embedded document knowledge without external API calls.

EXPERIENCE LEARNING

Assistant Teacher, Kuttys Classes

May 2023 – Sep 2023

- Taught Mathematics to 9th and 10th grade students by creating engaging lesson plans and simplifying complex concepts through visual aids and real-world examples.
- Conducted regular assessments and personalized tutoring sessions to help students strengthen problem-solving skills and improve overall academic performance.
- Collaborated with other instructors to design a structured curriculum that fostered consistency, active participation, and measurable learning outcomes.

National Service Scheme (NSS) Head

June 2021 – May 2023

- Managed and led a volunteer team of over 30 members to organize community service camps, donation drives, and awareness programs across local communities.
- Directed social impact activities such as educational skits and teaching sessions for underprivileged children, promoting literacy and life skills development.
- Coordinated logistics, resources, and partnerships with local organizations to ensure efficient execution of large-scale NSS initiatives and events.

ADDITIONAL ACTIVITIES

Tour Lead

Jan 2026 – July 2026

- Organized and led inter-state group tours across India, handling all logistics including travel planning, budgeting, and safety coordination for 20+ participants.
- Ensured seamless travel experiences by managing accommodation, transportation, and daily itineraries while addressing on-ground challenges effectively.
- Promoted team bonding and cultural awareness through interactive group activities, heritage exploration, and immersive learning experiences.

Creative Head & Coordinator, College Cultural Committee

May 2023 – Sep 2023

- Supervised creative planning, décor, and event design for college fests and functions, ensuring cohesive themes and visually appealing setups.
- Managed a team of student volunteers to execute cultural programs, stage events, and campus decorations within strict deadlines and limited budgets.
- Collaborated with organizing committees and faculty to streamline logistics and maintain high-quality event experiences.

Publicity Coordinator, Computer Society of India (CSI)

June 2021 – May 2023

- Designed and curated digital posters, banners, and promotional content in Canva to enhance event visibility and student participation.
- Collaborated with technical teams to develop communication materials that aligned with the objectives and branding of CSI initiatives.
- Increased audience engagement by managing pre-event announcements, social media promotions, and post-event updates.

Links:

LinkedIn: <https://www.linkedin.com/in/anushika-balamurgan-424847184/>

GitHub: <https://github.com/anushiikabala>

Portfolio: <https://portfolio-anushika.vercel.app/>