

# ANUSHIKA BALAMURGAN

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## EDUCATION

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### Northeastern University | Boston, MA

*Master of Science in Information Systems*

**Expected May 2027**

### Mumbai University | Navi Mumbai, India

*Computer Engineering*

**May 2023**

## SKILLS

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**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

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### 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

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### 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

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<b>Assistant Teacher, Kuttys Classes</b>	<b>May 2023 - Sep 2023</b>
<ul style="list-style-type: none"><li>• Taught Mathematics to 9th and 10th grade students by creating engaging lesson plans and simplifying complex concepts through visual aids and real-world examples.</li><li>• Conducted regular assessments and personalized tutoring sessions to help students strengthen problem-solving skills and improve overall academic performance.</li><li>• Collaborated with other instructors to design a structured curriculum that fostered consistency, active participation, and measurable learning outcomes.</li></ul>	

<b>National Service Scheme (NSS) Head</b>	<b>June 2021 - May 2023</b>
<ul style="list-style-type: none"><li>• Managed and led a volunteer team of over 30 members to organize community service camps, donation drives, and awareness programs across local communities.</li><li>• Directed social impact activities such as educational skits and teaching sessions for underprivileged children, promoting literacy and life skills development.</li><li>• Coordinated logistics, resources, and partnerships with local organizations to ensure efficient execution of large-scale NSS initiatives and events.</li></ul>	

## ADDITIONAL ACTIVITIES

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<b>Tour Lead</b>	<b>Jan 2026 - July 2026</b>
<ul style="list-style-type: none"><li>• Organized and led inter-state group tours across India, handling all logistics including travel planning, budgeting, and safety coordination for 20+ participants.</li><li>• Ensured seamless travel experiences by managing accommodation, transportation, and daily itineraries while addressing on-ground challenges effectively.</li><li>• Promoted team bonding and cultural awareness through interactive group activities, heritage exploration, and immersive learning experiences.</li></ul>	

<b>Creative Head &amp; Coordinator, College Cultural Committee</b>	<b>May 2023 - Sep 2023</b>
<ul style="list-style-type: none"><li>• Supervised creative planning, décor, and event design for college fests and functions, ensuring cohesive themes and visually appealing setups.</li><li>• Managed a team of student volunteers to execute cultural programs, stage events, and campus decorations within strict deadlines and limited budgets.</li><li>• Collaborated with organizing committees and faculty to streamline logistics and maintain high-quality event experiences.</li></ul>	

<b>Publicity Coordinator, Computer Society of India (CSI)</b>	<b>June 2021 - May 2023</b>
<ul style="list-style-type: none"><li>• Designed and curated digital posters, banners, and promotional content in Canva to enhance event visibility and student participation.</li><li>• Collaborated with technical teams to develop communication materials that aligned with the objectives and branding of CSI initiatives.</li><li>• Increased audience engagement by managing pre-event announcements, social media promotions, and post-event updates.</li></ul>	

## Links:

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

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

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