ANUSHIKA BALAMURGAN

Boston, MA | (463) 320-4816 | Anushikabalamurgan.f@northeastern.edu | LinkedIn

SUMMARY

Master's student in Information Systems with hands-on experience in Data Engineering, Generative AI, and RAG systems. Skilled in Python, Spark, and LangChain for building scalable data pipelines, dashboards, and GenAI-powered automation. Passionate about building intelligent agentic systems that enhance reliability, and automation.

EDUCATION

Northeastern University | Boston, MA **Expected May 2027**
Master of Science, Information System

Mumbai University | Navi Mumbai, India **May 2023**
Computer Engineering

SKILLS

Programming: Python, C, C++, SQL, HTML, CSS, JavaScript, Flutter, Git, GitHub, Streamlit, Flask, React, Node.js, TypeScript, Object-Oriented Programming (OOP), CI/CD pipelines, GPU-based model optimizatio
Databases & Data Systems: MySQL, PostgreSQL**,** Mongo DB, SQLite
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, improving frontend performance and implementing client-driven features.
- Designed and implemented proof-of-concept Generative AI solutions for personalized information delivery and decision-making.
- Gained hands-on experience in frontend technologies, AI integration, and collaborative development within a client-focused environment.

PROJECTS

End-to-End Visualizations **May 2024**
Client: Johnson & Johnson

- Developed an enterprise-grade **React.js** dashboard integrating **Charts**, and REST APIs for real-time data visualization and monitoring.
- Collaborated with backend teams using **Flask** and **Azure services** to ensure secure API integration and consistent data flow across visualization layers.
- Implemented **state management with Redux**, optimized rendering logic, and applied **component-based architecture** for maintainable, scalable frontend development.

Association of American Medical Colleges (AAMC) Chatbot **July 2024**

- Created a **Generative AI chatbot** using **Python, Flask, and Azure OpenAI** to interact with insights derived from **backend PDFs**.
- Developed a hybrid LLM + retrieval chatbot integrating symbolic FAISS search and neural generation (Azure OpenAI + LangChain).
- Designed a conversational interface to provide structured responses based solely on pre-embedded document knowledge, without any real-time API dependencies.

Healthcare Prior Authorization **Dec 2024**

- Developed a **Generative AI workflow** using **Python, Flask, React, and Azure OpenAI (GPT-3.5)** to automate evaluation of patient insurance claims for prior authorization.
- Enabled secure upload and processing of **patient medical histories**, generating concise medical summaries through **OpenAI embeddings** and **FAISS-based indexing**.
- Built an interactive **chat interface** powered by **LLM-driven contextual retrieval (LangChain + FAISS)**, allowing healthcare reviewers to query clinical details by **Current Procedural Terminology (CPT)** descriptions to assist in claim acceptance or denial decisions.

Computer System Validation **March 2025**

- Built a **Generative AI platform** using **Python, Flask, React, Groq LLM**, and **Hugging Face Transformers** to automate computer system validation document generation and review.
- Integrated **FAISS-based retrieval** and **LangChain RAG pipelines** for context-aware access to regulatory, requirement, and validation records
- Experimented with golden test sets and evaluation metrics for RAG system stability and drift detection.