GAYATHIRI ELAMBOORANAN

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SKILLS

ML Frameworks: Transformers, Prompt Engineering, TensorFlow, Scikit-learn, NLP, LLM, RAG, Lang chain, NLTK
Data Tools: Pandas, NumPy, Matplotlib, Seaborn, SciPy **|Databases:** Neo.4j, Pinecone
Programming: Python, C, Verilog **| Scripting & Markup:** SQL, HTML, CSS | **Testing**: JaCoCo white box, black box.
Web Development: Flask, Streamlit, Django, React.js, Next.js, Tailwind.css, Framer Motion, Bootstrap
Tools & Platforms: AWS, Linux, MATLAB, QualNet, Git, Atlassian **| Networking:** HTTP/2, Load Balancing & Routing Algorithms
Methodologies: Agile, Waterfall, Continuous Improvement, Project Management, Data Pipelines

EDUCATION

Master of Engineering – Electrical and Computer **2024**
Concordia University, Montreal, Quebec, Canada
Relevant Coursework: Software Engineering, Software Testing, System Design, Higher Layer Tele Protocols.

Bachelor of Engineering - Electronics and Communication **2021**
SRM Institute of Science and Technology, Chennai, India
Relevant Coursework: Communication Systems, Embedded system design, Digital Circuits and Electronic Circuits.

RESEARCH WORK

LLM-Based Root Cause Analysis, Concordia University **2024**

- Led advanced root cause analysis within AWS microservices using Large Language Models (LLAMA, Mistral), TensorFlow, and Transformers to enhance system reliability and performance.
- Engineered robust data pipelines and performed preprocessing using Python, Pandas, and NumPy, integrated synthetic datasets with Pinecone for increased data analysis precision.
- Developed sophisticated knowledge graphs with Neo4J and implemented a Retrieval-Augmented Generation (RAG) system using the MIXTRAL model, employing zero-shot learning for enhanced predictive accuracy and autonomous problem-solving.
- Utilized prompt engineering techniques to tailor system queries for optimized accuracy and relevance of insights, using Matplotlib and Seaborn for effective data visualization to support decision-making and stakeholder communication

PROJECTS

Portfolio Website Design **2024**
A dynamic, responsive personal portfolio website showcasing my skills, projects, and professional experience

- Designed and developed using React.js, Next.js, Tailwind CSS, and Framer Motion, with a vector model for creating background animations and an email API for contact form functionality.

Freelancer Platform Website @ Concordia University **2023**
Developed a user-friendly platform with Gmail/Facebook login, dynamic home screen, and task ticket creation.

- As Scrum Master, led project initiation and advancement with Agile practices, crafting UML diagrams, and coordinated effectively using GitHub, Jira, and MS Teams.
- Utilized Flask for backend development and leveraged HTML, CSS, and Bootstrap to elevate frontend user experience, coupled with SQL for database management.

Content Delivery Network Design and Implementation@ Concordia University **2023**
Led the development of a high-performing Content Delivery Network (CDN) using the HTTP/2 protocol, enhancing video streaming with additional features for an optimal user experience.

- Integrated HTTP/2 to streamline data communication and implemented Round Robin for load distribution.

WORKSHOP/ PUBLICATION

- MATLAB Workshop: AI and Deep Learning - Space Concordia and MathWorks **2024**
- Fusion Routing Algorithm for Aerial Wireless Network - IJIRT JOURNAL **2021**

V OLUNTEER EXPERIENCE

- 8th Graduate Student Research Conference, Concordia University **2024**
- Health and Hygiene Awareness, Remote Villages **2021**