Pavithran Gnanasekaran

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EDUCATION

State University of New York at Buffalo   **Buffalo, New York**
M.S. in Computer Science   *Expected Graduation, Dec 2025*
- **Concentrations:** Artificial Intelligence and Machine Learning   **GPA:** 3.9/4.00
- **Related Coursework:** Data Structures & Algorithms, Machine Learning, Reinforcement Learning, Deep Learning, Data Science, Database Systems, Operating Systems, Computer Vision, Natural Language Processing

RESEARCH PAPER

Self-Supervised MRI Representation Learning for Cross-Domain Brain Disorder Classification   **Pittsburg, Pennsylvania**
First-Author   *IEEE CogMI 2025*

EXPERIENCE & INTERNSHIPS

Alvora AI   **Dover, Delaware**
Software Developer Intern – Artificial Intelligence   *Sept 2025 – Present*
- Developed a RAG-based chatbot LLM for Alvora AI, improving answer accuracy by 42% and reducing query time by 30%.
- Optimized prompt inputs and output parsing, leveraging AWS S3 & GCP Cloud reducing model response latency by 28%.
- Built Django debugging tools and auto-docs, Docker+K8s containerized, improving maintenance speed by 40%.

Dept. of CSE, University at Buffalo   **Buffalo, New York**
Research Assistant   *May 2025 – Present*
- Built MRI AI pipelines on Vertex AI & MLflow using Hugging Face, Weaviate & AWS Bedrock, boosting accuracy by 18%.
- Deployed real-time AI app via FastAPI, Streamlit & Hugging Face with Docker & Kubernetes, cutting latency by 35%.
- Designed GraphRAG reasoning engine with LangChain, LangGraph & Neo4j, improving retrieval precision by 22%.

UB–Office of Academic Affairs   **Buffalo, New York**
Software Engineer- Data & AI Platforms   *Mar 2025 – May 2025*
- Designed & implemented data pipelines using Apache Spark, Kafka, and Airflow, boosting speed and reliability.
- Deployed microservices on Kubernetes with Docker & AWS EKS, ensuring 99% uptime seamless cross-system scaling.
- Built AI-integrated frameworks with TensorFlow, PyTorch, and REST APIs, accelerating analytics & dev cycles.
- Optimized PostgreSQL & MySQL queries, improving data accuracy by 15% and resolving performance bottleneck.

PROJECTS

LLM-Based Text Summarization NLP Models with BART   **Buffalo, New York**
Individual Project   *Mar 2025 – May 2025*
- Built BART+RAG summarizer handling 4K words, generating concise 100–200 word outputs with contextual retrieval.
- Trained with PyTorch AMP & Hugging Face, reducing GPU memory by 35% and accelerating convergence significantly.
- Deployed FastAPI backend on AWS EC2 with Docker, Nginx, PostgreSQL & Pinecone <200ms latency for 100+ request.

Full-Stack Portfolio Web App   **Buffalo, New York**
Team Member   *June 2025 -Aug 2025*
- Built a scalable Next.js, React, TailwindCSS portfolio app with TypeScript, boosting page responsiveness by 28%.
- Implemented a Node.js/Express backend with MongoDB for dynamic content, improving data fetch speed by 35%.
- Deployment on vercel with GitHub Actions CI/CD, ensuring API response times under 200ms for optimal performance.

Cloud-Native Automotive Database & Analytics Platform   **Buffalo, New York**
Team Member   *Feb 2025 – Apr 2025*
- Architected AWS RDS PostgreSQL schema with complex trigger SQL queries, automating workflows for 30k+ record.
- Built ingestion pipeline using BeautifulSoup + AWS S3 + Lambda, enabling scalable scraping & structured 100k+ data.
- Deployed Streamlit dashboard on Kubernetes with Docker, CI/CD, Grafana, improving insight delivery by 35%.

SKILLS

Languages/Databases: Python, C/C++, Java, Ruby, JavaScript, C#, Typescript, Dart, MySQL, MongoDB, Firebase, PostgreSQL
Web/ App Development: HTML/CSS, Flask, Django, AngularJs, ReactJs, Node.js, TailwindCSS, Express, FastAPI, Ruby, Flutter
AI/Cloud Technologies: PyTorch, TensorFlow, GenAI, RAG, AWS, Azure, GCP, Kafka, Terraform, Docker, Kubernetes, GitHub
Other: GDB, Tableau, Git, Vs Code, Xcode, Linux, Jira, Bash, Snowflake.