Gowtham Arulmozhi

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Education

Oregon State University	Corvallis, US
Master of Science, Artificial Intelligence (AI) (GPA: 3.74/4)	Sep 2023 – Jun 2025
Coursework: Machine Learning, Deep Learning, Natural Language Processing, Computer Vision, Reinforcement Learning	
Sri Sivasubramaniya Nadar College of Engineering	Chennai, India
Bachelors of Engineering in Electronics and communication (EC) (GPA: 8.3/10)	Jul 2017 – Apr 2021
Coursework: Cloud Computing, Probability and Statistics, Signal Processing, Data Structures and Algorithms	

Skills

Programming Languages: Python, Go/Golang, SQL, Bash scripting, Java, C/C++, YAML, JavaScript, HTML/CSS Programming Languages: Python, Go/Golang, SQL, Bash scripting, Java, C/C++, FAML, JavaScript, HTML/CSS
ML Tools & Frameworks: HuggingFace, LlamaIndex, LangChain, LangGraph, CrewAI, Agno, Autogen, Semantic Layer, Model Context Protocol, Haystack, TensorFlow, PyTorch, Scikit-learn, SciPy, Pandas, NumPy, OpenCV, Flask, FastAPI, Streamlit, Tableau, Power BI, Excel, A/B Testing, MLOps, Airflow, Apache Spark, Hadoop, ETL Pipelines
DevOps & Cloud Technologies: Docker, Kubernetes, Terraform, Helm, Ansible, Jenkins, GitHub Actions, Prometheus, Grafana, Elastic Stack, Open Telemetry, Serverless, CI/CD Pipelines, IaC (Infrastructure as Code)
Cloud Platforms and OS: Linux, Ubuntu, Amazon Web Services (AWS) (EC2, S3, VPC, lambda, CloudFormation, ECS, EKS, Sacameters)

Sagemaker), Google Cloud Platform (GCP)

Databases & Storage: MongoDB, Redshift, DynamoDB, ChromaDB, FAISS, Haystack, MySQL, Neo4j, Amazon Redshift Concepts & Practices: Object Oriented Programming (OOP), Infrastructure as Code (IaC), Continuous Integration and Continuous Delivery (CI/CD), Observability, Monitoring, Software Development Lifecycle (SDLC), Agile Methodology

Work Experience

OSU IDEA Research group

Research Work volunteer

- Leveraged large language models (LLMs) to automate schema alignment across MIMIC, OMOP, and Synthea datasets, achieving over 60% validation accuracy and reducing manual effort by 50%.
- Developed Python tools to parse 2000+ BibTeX entries and SQL DDL files, generating efficient INSERT statements to streamline structured data integration and improve database population workflows.

National Payments Corporation of India

Associate Technical Architect

- Enhanced system resilience by 80% through optimized root cause analysis and troubleshooting of distributed cloud systems using open source tools, aligning with best practices in continuous integration and delivery.
- Optimized high-availability cross-site cloud infrastructure with tools like Kafka, Redis, Keydb, Nginx, and PostgresSQL/Cassandra, improving efficiency by 90% and supporting over 1B daily transactions.
- Developed an 80% accurate fraud detection model for the Aadhaar-enabled Payment System (AePS) using machine learning algorithms in Python, and integrated Kubeflow for automated model training and scalable deployment.
- Built and managed CI/CD pipelines integrated with the EFK stack (Elasticsearch, Fluent-bit, Kibana), Prometheus, and Grafana to enhance system observability and deployment performance, improving system responsiveness by 20% for 50K+ digital currency users and ensuring robust release management.
- Pioneered a custom YOLOv5-based model achieving 90% accuracy in number plate recognition and text extraction, showcasing proficiency in ML model development and real-time inference.

Projects

- PoseSense 2D Pose Estimation: Built PoseSense, a 2D pose estimation model using the Hourglass network architecture, attaining a mean Average Precision (mAP) score of 0.85. Tools: Python, TensorFlow/PyTorch.
- Arrhythmia Detection: Designed a prototype model using TinyML (Arduino + DeepCNN Model) that achieved 95.7% accuracy in detecting arrhythmic waves, validated with real-time ECG signals. Tools: Python, PyTorch, Arduino IDE.
- AI Video Avatar: Engineered and deployed a containerized microservice for AI video avatar generation at Beaverhand startup, leveraging GeneFace++, LangChain pipelines, and LLM prompt tuning for dynamic speech-to-lip synchronization. Designed RESTful APIs using FastAPI for seamless model serving, achieving a 10% improvement in sync accuracy through systematic performance evaluation. Tools: Python, PyTorch, OpenCV, FastAPI, JavaScript, VertexAI.

Certifications

AWS - Certified Cloud Practitioner, AWS - Solutions Architect Associate, Certified Kubernetes Administrator

Corvallis, US

Chennai, India

Aug 2021 – Sep 2023

Mar 2024 – Dec 2024