Arunkarthik Periyaswamy

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Professional Experience

Medtronic Labs Dec 2024 - May 2025
ML/AI Research Intern *Remote, United States*
- Built a multilingual conversational AI application by fine-tuning Whisper transformer model using PyTorch, and deployed on AWS SageMaker to enhance user interaction that reduced clinician workload by 40%.
- Created a Streamlit app integrated with LLM models and deployed on AWS Sagemaker for seamless user interaction.

University at Buffalo *Aug 2024 - Dec 2024*
Teaching Assistant Buffalo, United States
- Assisted in lecture delivery and created assignment materials covering algorithm complexity and data structures.
- Provided feedback and explained advanced algorithms and Java OOPS concepts that enhanced student understanding.
- Implemented GitHub actions for automated grading that enhanced code review efficiency

Ideas2it Technologies Private Limited Jan 2023 - Jan 2024
Senior Software Engineer *Chennai, India*
- Developed a React-based admin interface with TypeScript facilitating secure configuration of healthcare user operations.
- Transitioned a legacy Node.js system to a scalable Java-based microservices architecture with Spring Boot, enhancing system modularity, scalability, and deployment efficiency.
- Trained and onboarded 2 interns in an agile engineering team, made them project ready within a week.

Ideas2it Technologies Private Limited Jan 2021 - Jan 2023
Software Engineer *Chennai, India*
- Built an automated recruitment tool using React, Whisper voice API and Flask that enabled hiring 150+ professionals.
- Engineered a Node.js-based microservices backend for a healthcare platform using Express.js to manage patient data, clinical workflows, and administrative operations.
- Enhanced CI/CD pipelines with Jenkins, streamlining testing and automation steps cutting deployment times by 30%.
- Automated the process of updating Oracle databases using Shell script and written unit tests using Junit and Mockito.
- Transformed and validated HL7 medical data using SOAP and REST APIs, ensuring secure and compliant data exchanges for 25+ client systems.

Education

University at Buffalo Jan 2024 - May 2025
Master of Science in Computer Science - Data Science *Buffalo, United States*
Coursework : Distributed Systems, Database Design, Data Structures and Algorithms, Cloud Development, Reinforcement Learning, Machine Learning, Computer Security

Projects

Product Recommendation System for E-Commerce March 2025
- Built a deep learning pipeline using OpenCV and EfficientNet to classify user-uploaded images and extract visual features to recommend relevant products (e.g., clothing colors, accessories) based on personalized appearance traits.
- Integrated the model into a scalable e-commerce application using Java Spring Boot and React, deployed on AWS, and connected to Amazon's Product API for dynamic product retrieval and recommendation.

Document Summarization for Enterprise Knowledge Systems December 2024
- Designed a reinforcement learning-based document summarization pipeline using Lightweight BERT and Proximal Policy Optimization to generate concise and context-aware summaries for internal knowledge bases and support tickets.
- Developed a custom reward function to optimize coherence and reduce redundancy, evaluated using BLEU and ROUGE metrics for summary quality in long-form enterprise documentation.

Credit Risk Prediction System for Banking October 2024
- Built a machine learning model to assess credit risk using 10,000+ customer profiles, applying XGBoost, Naive Bayes, and KNN to classify applicants based on repayment likelihood, achieving 95% accuracy.
- Deployed an interactive Streamlit application to enable loan officers and analysts to run real-time credit scoring and visualize key risk indicators from model outputs.

Skills

Programming Languages: Go, Java, SQL, Python, C, C++, JavaScript, TypeScript, Perl
Databases: SQL, MongoDB, Redis, OracleSQL, PostgreSQL, RDS, DynamoDB, MSSQL
Cloud: AWS, Azure, Docker, EC2, ECS, ECR, Lambda, API Gateway, S3, Azure DevOps, Route 53, CDN
Tools: Git, Postman, GitHub Actions, RabbitMQ, Swagger, SonarQube, Shell, Terraform, Apache Solr, Linux, WPF
Web Development: React.js, Node.js, HTML, Spring, SASS, Angular, Redux, Microservices, GraphQL, Kafka