Kaushik Alaguvadivel Ramya

Brooklyn, NY 11220

929-754-9853 | kaushikar2211@gmail.com | LinkedIn | github.com/kaushikar11 | Scholar | Portfolio

Education

New York University | *Master of Science in Computer Science* | GPA: 3.33/4.0 **May 2027**

- *Relevant Coursework:* Algorithms, Big Data, Information Visualization, Machine Learning, Data Science

Thiagarajar College of Engineering | *Bachelor of Technology in Information Technology* | GPA: 3.7/4.0 **May 2025**

- *Relevant Coursework:* Machine Learning, Artificial Intelligence, Data Mining, Data Analytics, Cloud Computing, Algorithm Design, Fuzzy Sets and Clustering, Information Retrieval, Probability and Statistics
- Teaching Assistant for Cloud Computing and Distributed Systems, supporting 200+ students

Experience

Machine Learning Research Assistant **Sept 2022 – May 2025**

Thiagarajar College of Engineering | Advisor: Dr. S. Padmavathi | Explainable AI, Deep Learning, Fairness in ML

- First author on 3 IEEE publications in AI and Explainable ML, garnering 10+ citations — **Link**
- Partnered with Defence Institute of Advanced Technology to create lightweight CNN for UAV threat detection
- Architected Cross Stage Partial Network achieving 5× lower computational complexity, 20× faster inference, and 5% accuracy improvement over SOTA models for real-time defense applications
- Applied SHAP game-theoretic framework to analyze 500+ wearable sensor features, enhancing model interpretability while cutting feature redundancy by 30%

Machine Learning Engineer Intern **Dec 2023 – Jan 2024**

*Pi42 | GenAI e-commerce platform with full-stack development, Image Generation, Generative models | **Link***

- Built Tweeshirt, an AI-powered e-commerce platform using Stable Diffusion, React.js, and Node.js for custom apparel design
- Integrated OAuth authentication with automated session management, cutting unauthorized access by 90% and improving login speed by 35%
- Created RESTful APIs for asynchronous Stable Diffusion image generation, processing 300+ daily requests with sub-2-second latency
- Automated complete order lifecycle from customization through shipping, eliminating manual intervention
- Streamlined production builds to accelerate order processing by 35%

Data Analytics Intern **Jun 2023 – Jul 2023**

Kaar Technologies | Predictive analytics and statistical modeling for business forecasting

- Engineered Python data pipelines with Pandas and NumPy to analyze 100K+ transaction records for seasonal trends
- Enhanced sales forecasting accuracy by 15% using ARIMA and multivariate regression across 6+ seasonal cycles

Technical Skills

- **Languages:** Python, C, C++, Java, JavaScript (ES6+), SQL, HTML5, CSS3, TypeScript
- **AI/ML:** Deep Learning, TensorFlow, PyTorch, Keras, Scikit-learn, Jupyter Notebook, Explainable AI
- **Cloud & DevOps:** AWS Certified AI Practitioner, AWS Certified ML Engineer, Docker, Git, Vercel, Kubernetes
- **Technologies:** React.js, Node.js, Express.js, Next.js, Flask, Firebase, MongoDB, MySQL, DynamoDB, S3
- **Architecture:** MVC, Microservices, Serverless, OOP, Database Design, System Design, Agile

Projects

Emotion Recognition using XAI | *GRU, SHAP, LIME, Fairness in ML, Bias Mitigation* **Link**

- Created GRU-based emotion classifier using biosignals (ECG, EMG, GSR, respiration, BVP) with 95% accuracy
- Applied fairness-aware techniques (LFR, DIR, Reweighing) to reduce demographic bias by 30% while maintaining performance. Evaluated using SPD, EOD, and TI fairness metrics

LegalAppa – AI Legal Document Platform | *GenAI, LLM, React.js, Node.js, Firebase, LaTeX, Document Analysis* **Link**

- Led 7-person team to build full-stack platform with LLM-powered document automation and LaTeX compilation
- Serving 15+ lawyers, cutting manual document preparation time by 97%

Energy Forecasting System | *LSTM, Graph Signal Processing, Time-Series Forecasting* **Link**

- Built time-series forecasting application for CS department energy consumption using fine-tuned LSTM, achieving 95% accuracy for 3-day predictions
- Leveraged Graph Signal Processing and GFT for appliance-level energy disaggregation with 90%+ identification accuracy