AIYSHWARIYA (Riya) Paulvannan Kanmani

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PROFILE

Experienced Applied Scientist with extensive expertise in statistical machine learning applications and research interest in environmental sustainability. Proficient in Python, PySpark, R, SQL, C/C++, MS Excel, and cloud and data platforms including Azure, Databricks, and Tableau. Specializes in machine learning, natural language processing (NLP), recommender systems, clustering, predictive modeling, data analytics & visualization, operations research, and big data.

EDUCATION

Texas A&M University (TAMU), College Station, TX, USA *May'26 – Present*
Doctor of Philosophy, AI & Data Science in Civil Engineering

Purdue University (PU), West Lafayette, IN, USA *Aug'17 – July'19*
Master of Science, Industrial Engineering
- ***Thesis**: Assessing Global Environmental Sustainability Via an Unsupervised Clustering Framework, **Advisor**: Dr. Roshi Nateghi*

Indian Institute of Technology Madras (IIT M), India *Aug'13 – July'17*
Bachelor of Technology | Minor: Operations Research
- ***Thesis**: Electrodeposition of Copper Foam and Testing its Application in Denitrification, **Advisor**: Dr. Lakshman Neelakantan*

PROFESSIONAL EXPERIENCE

Amazon | Applied Scientist *July'22 – May'26*
Voice of Customer – Discovery Science
- Implemented an anomaly detection system to proactively identify operational defects impacting customer service
- Expanded AI customer service chatbot feature to support semantic search-based anecdote retrieval

***Devices Demand Science:** Built & deployed daily demand forecast ML models for all Blink devices for automated planning*
- Led the creation and deployment of daily demand forecast ML models for Blink devices, automated planning processes.
- Drove scientific improvements across device families, leveraging dynamic lag and cross-cannibalization features.

American Airlines - Operations Research & Advanced Analytics Group | Senior Data Scientist *Oct'19 – July'22*
Developed & implemented AI solutions, including a maintenance fix recommender system and prediction models for risky aircrafts
- Engineered a maintenance fix recommender system using NLP on log texts, decreased re-work by 65%.
- Developed prediction models targeting and prioritizing risky aircrafts, optimizing maintenance operations.
- Investigated & rectified misdiagnoses in the engine part removal process, improving operational efficiency by 10%.
- Implemented an ML solution based on propensity prediction, increasing customer email offer CTR by 40%.
- Personalized ancillary purchase offers to traveling customers through machine learning propensity models.

Purdue University | Graduate Teaching Assistant *Aug'18 – May'19*
- Courses: Statistical Quality Control, Probability & Statistics, Optimization for Big Data (total 300+ students)
- Created video tutorials for application of theoretical concepts using tools such as R to solve industry problems

Franklin Templeton Investments | Operations Data Analyst Intern *Summer'16*
- Identified critical areas for market capitalization through comprehensive exploratory data analysis.
- Delivered recommendations resulting in a 40% increase in profit margin, fostering improved relations with the firm.

RESEARCH EXPERIENCE & PUBLICATION*

***Assessing Global Environmental Sustainability Via an Unsupervised Clustering Framework** *Aug'18 – July'19*
- Proposed a machine learning framework to objectively assess global sustainability for environmental policy makers.
- Utilized unsupervised learning theory to assess and track the sustainability of countries over a 10-year period.
- Identified country-specific trajectories towards enhancing environmental sustainability.

Multivariate prediction of Greenhouse-gas Emissions *Spring'18*
- Developed & implemented a multivariate boosting model to predict 4 types of greenhouse-gas emissions.
- Revealed underlying infrastructure of dependency between emissions & aspects of economy.

Reduction of Taxi Time in Air Traffic Control Systems: Simulation Modeling *Fall'17*

- Created a model simulating standard international airport operations to detect taxi time influencing factors.
- Evaluated factors' effects through statistical regression and recommended optimization strategies.

Carpooling Routing Algorithms for Fuel Efficiency *Spring'16*

- Simulated a Java algorithm predicting optimized fuel-efficient routes for carpooling on a real-life sub-network.
- Forecasted optimal routes with the highest fuel efficiency using typical travel demand information.

LEADERSHIP AND EXTRACURRICULARS

Amazon, Mentoring Program: Mentorship to interns for goal setting and career progression
American Airlines, University Relations (led Purdue hiring) **and Knowledge Sharing** (cloud platforms onboarding)
IIT Madras Aquatics: Represented the University and secured positions in inter-university sports meets
Head - Metallurgical & Material Student Association, IIT Madras: Elected in-charge and successfully executed all technical & cultural activities for the department