Bavithra Arumugam

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Education

New Jersey Institute Of Technology	Aug 2019 – May 2021
Master's in Data Science(GPA – 3.83)	New Jersey

Anna University	Aug 2013 – May 2017
Bachelor's in Information Technology(GPA – 3.7)	India

Experience

Machine Learning Intern CBS Interactive, ViacomCBS   Jun 2020 – Sep 2020

- Developed and tested ML services to automate Cloud Cost Prediction and Optimization for AWS and GCP cloud usage across 40+ organizations, 100+services, 14 BUs by performing time series analysis with FB's Prophet
- Slashed human time and cost spent on prediction by 95%, ensuring the prediction accuracy and quality

Research Assistant New Jersey Institute of Technology   Sep 2019 – Feb 2020

- Developed ML models that predict whether a Twitter account is a troll within a set of 170K control accounts
- Demonstrated usage of this model to find active accounts on Twitter still likely acting on behalf of the Russian state
- Extended the model to identify Russian troll accounts across platforms like Facebook, Reddit, etc.,

Associate Software Analyst Radial Omnichannel Technologies Pvt Ltd.   Jun 2017 – Jun 2019

- Developed integration solution between the Radial's E-commerce products to multiple clients using WebMethods by analysing data of large volumes
- Developed application design, including data modelling, data transformation and performance efficient dashboard development across the global projects
- Built and tested a queue system to replace directory system to process orders. Speed of processing increased by 80%

Tech Intern Hostnet Media   Feb 2017 – Apr 2017

- Designed a mapping application that allows users to view a real time stream of Twitter hash tags

Skills

- **Machine Learning Conceptual Skills**
  Deep Learning, Supervised and Unsupervised Models, Reinforcement Learning, Ensemble Methods
- **Machine Learning Technical Skills**
  Python, R, Sci-kit learn, Keras, PyTorch, TensorFlow, OpenCV, CUDA, SageMaker
- **Data Analysis and Visualization**
  Tableau, MATLAB, Plotly, Dash, QlikView
- **Other Skills**
  AWS, BigQuery, Hadoop, Hive, Spark

Machine Learning Projects

- **Quantum Machine Learning (Current)** – Developing auto hyperparameter tuning and optimization for neural network models using Quantum bits and Quantum evolutionary algorithm
- **AWS DeepRacer on Reinforcement Learning** – Trained an RL model on AWS DeepRacer in a simulated environment, later can be transferred to the real world
- **Comparing Information Sharing behaviour across Social Platforms** – Developed an ML model using Random Forests with AdaBoost to classify between troll and non-troll accounts and compare the behaviour of coordinated action and foreign influence campaigns in social platforms like Twitter and Reddit
- **Time Series Analysis of sales** – Developed an ML model to predict the product sales at any given period to facilitate inventory management using LSTM
- **Cancer Survival time prediction of Brain Tumour MRI images (Patentable Subject)** – Developed an ML model to predict the cancer survival time using BraTS2018 image dataset with ResNet with 67% test accuracy (65% is the highest achieved)
- **Sleep Scoring Analysis using Brain Signals** – Developed an ML model for 5 stage sleep scoring on PhysioNet Sleep-EDF (EEG, EMG, EOG signals) dataset using ResNet and achieved 98% test accuracy
- **Portfolio Manager using R** – Developed a portfolio manager using R to select the best investment ETFs based on risk, returns and duration parameters

Certification

AWS Machine Learning Specialty (941/1000)	Jun 2020 – Jun 2023