BAVITHRA ARUMUGAM

Email: ba365@njit.edu LinkedIn Git About Me

EDUCATION

NEW JERSEY INSTITUTE OF TECHNOLOGY **Aug 2019 - May 2021**
Master's in Data Science GPA - 3.83

ANNA UNIVERSITY, INDIA **Aug 2013 - May 2017**
Bachelor's in Information Technology GPA - 3.72

PROFESSIONAL EXPERIENCE

CBS INTERACTIVE, NEW YORK - MACHINE LEARNING INTERN **Jun 2020 - Sep 2020**
Machine Learning Intern at CBS Interactive, the premier online content network for information and entertainment.
CLOUD COST PREDICTION

- 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.
- Executed the end-to-end project implementation, from requirement analysis to testing and deployment.
- Slashed human time and cost spent on prediction by 95%, ensuring the prediction accuracy and quality.

NEW JERSEY INSTITUTE OF TECHNOLOGY, NEW JERSEY - RESEARCH ASSISTANT **Sep 2019 - Feb 2020**
Research Assistant at NJIT, a top ranked public honors college.
SOCIAL MEDIA ANALYSIS - CROSS PLATFORM COORDINATION

- Developed an ML model using NLP in Keras 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 Russia with an accuracy of 92%.
- Extended the model to identify Russian troll accounts across platforms like Facebook, Reddit, etc.,

RADIAL OMNICHANNEL TECHNOLOGIES, INDIA - ASSOCIATE SOFTWARE ANALYST **Jun 2017 - Jun 2019**
Associate Software Analyst in Radial, the pioneer in omnichannel technology and operations enabling retailers to be commerce confident.
DATA ENGINEERING AND INTEGRATION

- Developed integration solution between the Radial's E-commerce products to multiple clients using WebMethods by analyzing data of large volumes.
- Developed application design, including data modeling, data transformation and performance efficient dashboard development across global projects.
- Built and tested a queue system to replace directory system to process orders. Speed of processing increased by 80%.
- Upgraded WebMethods Integration server from 7.1 to 9.6 version and performed end-to-end testing of modules.

HOSTNET MEDIA, INDIA - APPLICATION DEVELOPER INTERN **Feb 2017 - Apr 2017**
Application Developer Intern in Hostnet Media, a technology company that specializes in information technology services and consulting.

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

PROJECTS

- **QUANTUM MACHINE LEARNING** - Developing auto hyperparameter tuning and optimization for neural network models using Quantum bits and Quantum evolutionary algorithm.
- **AWS DEEP RACER ON REINFORCEMENT LEARNING** - Trained an RL model on AWS DeepRacer in a simulated environment, optimized the reward function to detect and avoid obstacles placed on the track and to finish in the best lap time.
- **COMPARING INFORMATION SHARING BEHAVIOR ACROSS SOCIAL PLATFORMS -** Developed an ML model using Random Forest with AdaBoost to classify between troll and non-troll accounts and compare the behavior of coordinated action and foreign influence campaigns in social platforms like Twitter and Reddit.
- **TIME SERIES ANALYSIS OF SALES AND INVENTORY** - 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 TUMOR 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 using ResNet for 5 stage sleep scoring on PhysioNet Sleep-EDF (EEG, EMG, EOG signals) dataset using ResNet and achieved 94% 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.
- **DIABETES PREDICTION USING K NEAREST NEIGHBOR** - Developed a classifier model to predict diabetes in patients using PIMA diabetes dataset using KNN with an accuracy of 97%.

SKILLS

- **PROGRAMMING SKILLS**
  Python, R, Java, C, C++, SQL
- **MACHINE LEARNING TECHNICAL SKILLS**
  Time Series Analysis, Supervised and Unsupervised Learning, Ensemble Methods, Data Analytics, Image Processing, Natural Language Processing, Big Data
- **MACHINE LEARNING LIBRARIES AND TOOLS**
  Python, Keras, PyTorch, TensorFlow, OpenCV, CUDA, Sci-kit learn, Pandas, AWS SageMaker, Hadoop, Hive
- **DATA ANALYSIS AND VISUALIZATION**
  Plotly, Dash, Seaborn, Matplotlib, Tableau, QlikView, AWS Quicksight

CERTIFICATION

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