PAVITHRAN RAMACHANDRAN

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https://tinyurl.com/git-pavi | https://tinyurl.com/stack-pavi | https://tinyurl.com/linkedin-pavi

EDUCATION

Northeastern University, Boston, MA

College of Computer and Information Science   *Class of 2019*

Master of Science in Computer Science, CGPA : 3.5

Courses : Algorithms, Machine Learning, Artificial Intelligence, Data Mining, Functional Programming, Databases

Pondicherry University, Pondicherry, India

Bachelor of Technology in Electronics and Communication Engineering, CGPA : 3.4   *Class of 2015*

Courses : Data Structures and Algorithms, Operating Systems, Introduction to Programming, Microprocessors and Microcontrollers

TECHNICAL KNOWLEDGE

Languages	Python, C++, Scala, Java, Bash (Shell)
Frameworks	Apache Spark, Hadoop, Kafka, Zookeeper, Azkaban, Airflow
Databases	MySQL, Redshift, Big-Query, Presto
Cloud Platforms	Amazon Web Services, Google Cloud Platform
Software and Tools	Git, Bitbucket, Confluence, JIRA, Bazel, BUCK
Python Libraries	Pytorch, numPy, pandas, sklearn, fastai, requests, matplotlib, seaborn

WORK EXPERIENCE

Facebook, Menlo Park, US   *February - 2021*

Software Engineer

- Optimize mobile lite interpreter to use instructions instead of operators making better performance on mobile devices (reduce time to perform a calculation)
- Co-Designed and implemented format change for mobile model from pickle to flatbuffer providing size and performance gains
- Created framework in the open source Pytorch Mobile to run all prod models through tracer and test version compatibility of model assets

Facebook, Menlo Park, US   *August - 2019*

Data Engineer

- Built and maintained every stage of data i.e., data extraction, cleaning, analysis and transformation which is fed to ML frameworks to generate predictions.
- Processed a wide range of data including graph and text based data and using schedulers to automate ETL process.

VideaHealth, Cambridge, US   *Spring - 2019*

Artificial Intelligence Engineer Intern

- Developed a model to classify dental X-ray images (dicom) into Bitewing, Panorama and Periapical types.
- Developed train, test and validation split of medical images based on multiple selection criteria like age, gender, geographical location such that the data is compliant with FDA standards (HIPAA) and is a statistically similar representation of the population.
- Designed and implemented analysis of dentist annotation behavior and cross validated dentists with each other to evaluate the correctness of annotation.
- Created pipelines to build consolidated data from annotation of various dentists by applying clustering techniques like DBSCAN and training the model and snapshot the input data and model training.

Grubhub, Philadelphia, US   *Summer - 2018*
Data Engineer Intern
- Developed an ETL testing workbench using pyspark and pytest that accelerates development time with TDD.
- Developed auditing framework to log performance and generate reports with all metrics of the ETL jobs.
- Solved bugs and migrated legacy ETL jobs related to Logistics of the Grubhub delivery and pick up data.

SapientRazorfish, Bangalore, India   *August 2015 – August 2017*
Associate Technology
- Developed Real-Time and Batch processing pipelines for clickstream analysis of user data in e-commerce websites using Apache Spark and Apache Kafka in AWS EMR.
- Developed User Identification on historical data from Redshift and Browser cache in Customer Data Platform.
- Developed a data processing engine for data from various IoT devices and Smart Phones, processing 10's of GBs of data per hour in both real-time and batch and created a framework for data scientists to interactively query data from Redshift.
- Developed Emotional Analysis and Selective Advertisement Targeting on Social Networks on the customers of leading American Bank during their MLB Campaign.
- Proposed and implemented various optimizations in the dynamic ETL processing of data heavier than 50 GB using Apache Spark and Big-Query in AWS EMR.
- Developed orchestration framework for end to end ETL processing of Web and Search data for 10+ countries in AWS using Lambda, SNS and Data Pipeline.

AWARDS & HONORS

Top 12% of the year 2018 in StackOverflow of with popular tags; Spark, Scala, Python, PySpark and Kafka	2018
Awarded the Best Performer in Data Specialty Consultation Group; SapientNitro	Q4 2016
Runners up HackMe2 (9 weeks of Hackathon) conducted by Sapient India	February 2017
Awarded Gold Medal by Indian Institute of Technology, Madras for securing 92% in Introduction to Programming, Data Structures and Algorithms Course (NPTEL NOC)	July 2015

PROJECTS

Single Image Super-Resolution Using a Generative Adversarial Network   *May 2020*
Implemented the [SRGAN paper](#) Image super resolution using DNN and GAN to upscale image by 4x factor

Toxic Comment Classification   *March 2020*
Kaggle competition on toxic comments from Twitter multi-label multi-class text classification. Mean accuracy of 0.995
Technologies: Python, PyTorch

Web page navigation for differently abled using Deep Learning   *Fall 2018*
Webcam data obtained from OpenCV and facial landmarks were predicted using Convoluted Neural Network and used as input to guide mouse and scroll action in a PC.
Technologies: python, tensorflow, keras, PyAutoGUI, OpenCV

AI Game Bot   *Spring 2018*
An AI game bot in an infinite runner game that learns using Genetic Algorithm and Q Learning Techniques. Active learning method was implemented to teach BOT using human inputs.
Technologies: python, pygame, json