Vamshi Bussa

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EDUCATION

University of Pittsburgh, *Pittsburgh, Pennsylvania*
Master's Degree in Computer and Information sciences - GPA:3.85 *Aug. 2019 – Apr. 2021*
Discipline : Scalable systems, Interactive system design, Data Science, Statistics, Signal Processing and Imaging.
Graduate Student Research Assistant under Prof. Heidi Donovan, Dr. Nicolas Farnan

Mahindra Ecole Centrale, *Hyderabad, India*
Bachelor of Technology in Computer Sciences and Engineering *Aug. 2014 – May. 2018*
Courses: Artificial intelligence, probability and statistics, data structures and algorithms.
Awards: Received Dean's Students' Scholarship for 2 years. Activities: Founded Robotics club 'Innovative Androids', 'Travel Club'.

SKILLS & OTHERS

Themes: Scalable systems, System Design, Cloud, Linear Algebra, Probability, Statistical Modeling, Convex Optimisation & Regularisation.
Machine Learning: Regression, Dimensionality Reduction, Density Estimation, Classification and Neural Network.
Programming: Python, R, SQL, Java, C, C++, MATLAB, Node.js
Interests: Microeconomics, Strategy Games and Traveling.
Libraries: Numpy, SciPy, Matplotlib, Pandas, Scikit-learn, Keras, Tensorflow, Pytortch, NLTK, PIL, Librosa, CNN, RNN, LSTM, HTML, CSS.

WORK EXPERIENCE

SAP, *Pittsburgh, Pennsylvania*
Data Engineer *June. 2021 – Present.*
- Working on multiple projects as functional team gathers technical requirements from clients like building scalable and re-usable data pipelines, ETL jobs, writing SQL queries, Performing schema design and dimensional data modeling.
- Built an end to end pipeline for different methods from a supervised and semi supervised learning to advanced deep learning methods. Implemented a system of AWS Lambda functions using python to collect data and store in S3 and SQL databases in regular time intervals scheduled using cloudwatch metrics.
- Worked further on an engine implementing pyspark for data processing with Kafka message queue, involved in deployment of a project using RDS, S3, EKS(Kubernetes) and dockers.

Philips, *Pittsburgh, Pennsylvania*
Software Development Intern *May. 2020 – December. 2020*
- Worked on multiple distributed, multi-tiered systems projects: building android apps compatible WearOS watch apps using Kotlin, Java Spring with direct application to data science, analysis of patients to address challenges on Health care industry.
- Developed a group of well-connected micro services connecting backend, machine learning pipelines to stream tranches of data from user's end and other end points.
- Independently wrote API functions in node.js, python which routes data from wearable devices to cloud based backend GCP AWS. Involved in brainstorming sessions with UX team to learn design philosophies implementation experience.
- Developed patient-physician payment gateway for a portal used by many Philips client-based hospitals across USA.
- Worked with RD team on multiple patentable devices to improve millions of people lives by solving sleep issues using sensor technology, AI/ML (CNN DNN) where I was co-author of a filed invention disclosure (ID-2020ID01002, Patent Pending).

Tech Mahindra, *Bangalore, India*
Data Scientist *July. 2018 – July. 2019*
- Worked on projects applying Data science and Machine learning techniques to address challenges on client side (Verizon,Logitech, Oracle) and across other internal teams within the company by regularly gathering requirements from stakeholders.
- Pioneered exploratory data analysis using SQL and Python, worked on ETL pipelines which used 'Change Date Capture' to stream data from the database to data lake via Apache Kafka.
- Built end to end machine learning pipelines using Python, Scala, and Kafka. Optimized models by adding additional features, utilizing advanced models such as feed forward neural nets, xgboost, lightgbm to achieve 85% accuracy. Implemented deployed Nginx – HTTP load balancer with AWS.
- Used LSTM RNN to improve demand forecasting over existing time series techniques. Took responsibility, led project meetings with clients, leadership team partners within the organization to define scope, ensure project's checkpoint resulting in on-time deliverables while balancing budget, client needs and customer satisfaction.

PROJECTS

INDOOR POSITONING SYSTEM
Guide: Prof. Jacob Biehl *Aug. 2019 – May. 2020*
- Developed an application relying on a novel algorithm to locate a network of wide variety devices (phones, tags, sensors, VR) used to wirelessly locate objects or people inside a building.
- Used numerous computational methods using different Deep Neural Networks, using linear programming optimization techniques reduced error i.e., in distance measurement from mt's to few cm's

Yelp Datawarehousing
Guide: Prof. Vladimir I. Zadorozhny *Jan. 2021 – Apr. 2021*
- Loaded Yelp open dataset into three variable databases – MYSQL, Neo-4j, MongoDB by transforming the data into OLAP format. Extracted analytical and business-critical information from each database using Pyconnectors.
- Compared the efficiency and time of queries in all the three databases and displayed them on UI developed with React. Also studied how YELP leverages AWS redshift and lake house approaches for fully managed data warehouse.