Aishwarya S Muchandi

Data Scientist | Machine Learning Engineer | Full Stack developer

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CAREER OBJECTIVE

My goal is to become a successful Data scientist by arriving at methodologies to help in understanding a given domain by mathematically modelling and implementing the same through software solutions using Machine learning techniques. I am also a Full Stack Developer, skilled in Object oriented programming (Python, Java, C/C++) as well as Database management & Web development.

EDUCATION

- ***Master's Degree in Computer Science - University of Texas, Arlington [Fall 2021 to Spring 2023]*** **3.80/4.0 GPA**
  [Courses: *Artificial Intelligence, Data Mining, Data Analysis and Modelling techniques, Design & Analysis of Algorithms, Neural Networks, Machine learning, Advanced Database Systems-Cloud computing, Database Systems, Python*]
- ***Bachelor's Degree in Computer Science & Engineering - Mumbai University, India [Aug 2016 - Aug 2020]*** **7.9/10 GPA**

SKILLS

Programming Languages	**:** Python (TensorFlow, Open AI, Power Bi, scikit-learn), Java, Spring Boot, R, C/C++, JavaScript, PowerShell, Scala, Hive, Spark
Data Science	**:** NumPy, Pandas, Scikit-Learn, PyTorch, Beautiful Soup, Keras, TensorFlow, SciPy, Matplotlib, Seaborn, Data Pre-processing
Natural Language Processing	**:** NLTK, GPT-3, BERT, LLMs (Large Language Models), LSTM (Long Short-Term Memory)
Machine Learning	**:** Data Mining, Statistical Analysis, Predictive Analysis, ML Algorithms, Predictive Modelling, Clustering Models, Deep Learning
Computer Vision	**:** OpenCV, Deep Neural Networks, AlexNet, CNN, FAST, NMS, SURF, SIFT, BRIEF, ORB, Autoencoders, PCA
Web technologies	**:** HTML5, CSS, JavaScript, Bootstrap, PHP, Flask, React, Laravel, React-Native, Node.js
Cloud Technologies	**:** AWS, Azure, Azure Databricks, Google Cloud
Database Technologies	**:** SQL, MySQL, PostgreSQL, MongoDB, Elastic Search, OpenSearch, Hadoop
Softwares	**:** Google Colab, Jupyter Notebook, Visual Studio, IntelliJ, Tableau, Power Bi, Weka, Alteryx, Docker, Postman, Jenkins,Kubernetes
Version controllers	**:** GitHub

WORK EXPERIENCE

Software Developer Machine Learning Engineer Intern, Zimperium Inc- Texas, USA **May 2022-May 2023**

- **Leveraged Knowledge** in Git, **Python**, Flask, Docker, Kubernetes, Java (Spring boot), Postgres- SQL, Kafka, Zookeeper, Kibana, Postman, Agile (Scrum) Developer, TeamCity, Microservices Architecture, Gradle, RESTful Web Services, Jenkins.
- Microservices **RESTful Services API Development** for new features: Backend Development of **microservices** using **Java** and **Spring Boot** for Zimperium's Dashboard – zConsole (Cloud Based Software-as-a-Service)
- **Implemented** user defined precedence input to view apps cards view by status. **Tested** the feature implementation using **Postman**.
- User **Upgraded a Backend Java Microservice** from Elasticsearch to OpenSearch which used Docker Services.
- **Designed and developed** best-fit strategy to overcome the inconsistent data error caused due to different database frameworks used, improved data retrieval speed by 15% after implementation.
- **Conducted extensive unit testing** using **Junit5, Mockito**; identified and fixed 30+ critical bugs, reducing post-deployment issues by 25%
- **Trained Prediction ML model** and **deployed** with 96.42 % accuracy which can detect anomaly behavior of (CVE IDs) Common Vulnerability and Exposure Ids; targeting various Market Categories. Used XG Boost.
- **Deployed Statistical ML model** in production using Python + Flask with REST API calls, to predict probability of CVE IDs (Security Flaws) occurring in diffe rent market categories.
- **Improvised** existing decision-making model by 30% accuracy using above two ML models.
- **Applied Machine Learning Techniques** including k-NN, Naive Bayes, SVM, and Decision Forests Algorithms to cluster CVE Ids based on the probability occurrence in different App Market Categories in (IOS, android).
- **Engineered a data pipeline in AWS S3** that preprocessed unstructured data in Athena, stored back in S3 and **used AWS QuickSight** to generate real-time dashboards resulting in 20% faster decision-making.
- **Implemented CI/CD practices** and **deployed code** on virtual Git environments to aid integration.
- **Served as a great asset** to the organization and hence got **three times extension of my summer internship. (Click here for more details)**

Data Science Intern, Spacee Inc-Texas, USA (Volunteering Internship) **Jan 2022 - May 2022**

- **Conducted** Research on detecting objects under objects using a mix of NMS (Non-Maximum Suppression) (Adaptive NMS, Joint NMS etc.), SKU110K algorithms.
- **Analyzing and collecting** data from various sources (Crowd Human, Wider Persons etc.)
- **Developing and Training** model to also detect food packet logos also detect tidiness measure in a shelf.

Machine Learning Intern, Novanet Pvt. Ltd., India **May 2019 - Sept 2019**

- **Implemented** Web Data Scraping, Data Mining, Feature selection, Hyperparameter Tuning.
- **Visualized** data using Tableau and **conducted** critical analysis and **optimization** of ML algos for better efficiency.
- **Developed** Emotion Analysis (positive, negative) using NLP. **Used Tableau** to portray problem areas of product in graphs.
- **Analyzed** customer's reaction and **improvised** organization's product. (Click here for more details)

TECHNICAL PROJECTS

Web Data Scraping & Data Analysis using Beautiful Soup, *University of Texas at Arlington*

- Web Data Scraping using Beautiful Soup on Medical Claim Reviews by HealthFeedback.org. Conducted End to End Fact Checking on these medical Claim Reviews. **Result:** Upon entering Author's name, returns how likely author delivers "Correct" or "Incorrect" claim reviews. (Click here to view project)

Sarcasm Detection on Twitter Dataset

- **Detected** positive, dissatisfied, and complex emotion (Sarcasm) in customer's reaction.
- **Used** (BiLSTM-DNN) Bi-directional Long Short Term Memory Deep Neural Networks model.
- **Implemented** Hyper-parameter Tuning using Grid-Search-CV with 95.86% accuracy. **Publishing** IEEE Research Paper. (Click here to access)

CIFAR-10 image classifier using Convolutional Neural networks, *University of Texas at Arlington*

- Built a Neural network model with multiple convolutional layers (CNN), cross-entropy function and SGC optimizer. Improved the performance by increasing number of layers and epochs. Accuracy ~ 65%

Self-Driving Autonomous Car, *University of Texas at Arlington*

- **Image Processing** using Convolutional Neural Networks. Used **Raspberry Pi and Arduino**.
- **Developed** a RC car model with Alex Net- YOLO model which detects and drives within the limits of road lanes.
- **Trained** using COCO dataset. **Detects** various traffic signals, pedestrians and **exhibits appropriate behavior**.

EXTRA CURRICULAR ACTIVITIES

- Won "**Honorary Mentions Award**" at Student Computing Research Festival (**SCRF@DFW**) on UT Arlington Website. (Click to view certificate)
- **Won 1stprize** in Smart City Ideathon in Education and Employment Sector. **Was awarded** a cash prize by Gov of India.
- **Won 3rd Place** at National Level **Machine Learning Hackathon** "ApScript Hackathon" conducted by IEEE.