MUKESH MITHRAKUMAR

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Experience

SR. MACHINE LEARNING ENGINEER   August 2020 – Current
IQVIA (full time)   Plymouth Meeting, PA

- Spearheaded the development and deployment of a suite of customer relationship management algorithms that brought in annual revenue of over 10 million. The algorithms create an omnichannel digital marketing and sales strategy targeted at healthcare providers based on future revenue generation to influence buyer decisions. Customers have seen on average a 120% year-over increase in revenue.
- Interface and communicate with teams across the business and with internal and external stakeholders and business partners to create machine learning solutions based on an understanding of business and technical priorities and act as a point of contact and thought leader for the team.
- Coach, mentor and led a team of 4 machine learning engineers to deliver business solutions.
- Designed, built, and productionized two recommender system architectures and a distributed temporal machine learning model in Kubeflow.
- Defined ML Ops practices and standards for Data and Model Testing, Validation, and Profiling.
- Used software design patterns, continuous integration, and development in the Scrum environment.
- Led full life cycle planning including sprint planning, code design and reviews and delivery of projects.
- Assisted in the migration of Airflow to Kubeflow.
- Technologies used: Python, SQL, PyTorch, TensorFlow, Airflow, Kubeflow, Docker, Kubernetes, Jenkins, Grafana, Prometheus, and Jaeger.

LEAD DATA SCIENCE INSTRUCTOR   December 2020 – February 2021
General Assembly (contract)   Riyadh, Saudi Arabia (Remote)

- Created and delivered daily lectures on Data Science Topics.
- Supervised a Data Science Instructor and two Instructor Associates.
- Oversaw 5 industry partnered projects with Saudi Telecom Company, King Abdullah International Medical Research Center, Lean Business Services and Moonshat Academy in Saudi Arabia.
- Coordinated regularly with industry partners to receive requests and provide feedback.

ASSOCIATE INSTRUCTOR, MACHINE LEARNING and ML Ops   May 2021 – November 2021 & March 2022 – April 2022
MACHINE LEARNING TEACHING ASSISTANT   December 2020 – February 2021
Fourthbrain (part time)   Remote

- Assisted the lead instructor and conducted weekly lectures on practical machine learning and ML Ops topics.
- Created end to end projects on AWS, Flask, TensorFlow Lite, Dask, PySpark, LIME and SHAP for machine learning explainability.

FOUNDER   August 2018 – August 2020
AD AI Solutions (full time)   San Francisco, CA

- Worked with stakeholders ranging from product managers to VPs from different industries ranging from banking to recycling to identify Machine Learning opportunities and develop products that align with their strategy.
- Advised founders, product managers, and data scientists on framing machine learning problems within the business context to optimize for KPIs and ensure continuous improvement in ROI through long term strategies.
- Effectively managed a team of three developers to deliver APIs deployed in AWS on time.
- Developed Machine Learning models from inception to deployment and production for early-stage startups in the areas of text summarization using BERT, Optical Character Recognition for automatic check deposit, Object Detection for cardboard recycling and prescription pill detection, BigGAN for art generation and YOLO for Multi-class Vehicle and pedestrian tracking on edge.
- Technologies used: Python, Java, node.js, JavaScript, Bash, C/C++, PyTorch, TensorFlow, DarkNet, OpenCV, AWS tools (Elastic Beanstalk, Step functions, Lambdas, SageMaker, API Gateway), Flask, Docker.

DATA SCIENCE MENTOR   December 2018 – Current
Thinkful & Springboard (part time)   San Francisco, CA
- Mentor and coach mid-career professionals participating in Thinkful & Springboards' Data Science Program on technical topics, approaches, best practices in data science and fundamental software engineering principles.

MACHINE LEARNING ENGINEER   May 2018 – August 2018
Data Science Retreat (full time)   San Francisco, CA
- Led the team that developed an open-source end to end object segmentation software package using PyTorch to assist radiologists in the evaluation of lesions in CT and MRI scans for multiple organs.
- Technologies used: Python, C, PyTorch and DICOM protocol.

Education

M.S. in Management | UNIVERSITY OF ILLINOIS-GIES COLLEGE OF BUSINESS | 2023
M.S. in Computer Science | ARIZONA STATE UNIVERSITY | 2023
B.S. in Physics, emphasis on Electrical Engineering & minor in Mathematics | SOUTH DAKOTA STATE UNIVERSITY | 2018
Foundation Degree, Business Administration and Management | UNIVERSITY COLLEGE DUBLIN | 2013

Projects (Available in GitHub)

Deep Learning with TensorFlow 2.0 Book
- Practical Exercises in TensorFlow 2.0 for Ian Goodfellow's Deep Learning Book.

TensorFlow Scientific Package
- Built and manage a TensorFlow Scientific library for scientific computing in collaboration with the TensorFlow 2.0 team.

Google AI Open Images – Object Detection (Kaggle Top 100 – Bronze Medal)
- Modified a RetinaNet package for Object Detection by training over 17 million images in Google Cloud.

Google AI Open Images – Visual Relationship (Kaggle Top 100 – Bronze Medal)
- Implemented a Random Forest Classifier and Multi Output Classifier from SciKit-Learn and experimented with LSTM for Visual Relationship identification in Google Cloud.

Statoil/C-CORE Iceberg Classifier (Kaggle Top 16%)
- Built an ensemble convolutional neural network to identify a ship or an iceberg from a remotely sensed satellite using TensorFlow, OpenCV, SciKit and Keras for a Log Loss of 0.1574.

Skills

- **Programming Languages**- Python, GO, Java, C, C++, JavaScript, Shell, Git, SQL.
- **Distributed Computation Frameworks**- Apache Spark, Hadoop.
- **Deep Learning Frameworks**- TensorFlow, PyTorch, Keras, Pandas, OpenCV.
- **Distributed Deep Learning Frameworks**- Horovod, Dask.
- **Machine Learning Frameworks** – SciKit-Learn, XGBoost, NumPy, SciPy.
- **Database Management**- MongoDB, Google BigQuery, db2.
- **Workflow Management**- Apache Airflow, Kubeflow, Vertex AI.
- **Cloud Computing**- Amazon Web Services, docker, Kubernetes, Google Cloud Platform.
- **Web Development**- Flask, HTML, CSS, jQuery, Node.js, Streamlit.
- **Profiling Framework**- Grafana, Jaeger, Prometheus.
- **Product Management**- Jira, Confluence.
- **Software Skills**- Jenkins, Lean, Agile, Scrum, Test Driven Development, CI/CD, Software Design Patterns, MLOps, SonarQube.