

# MUKESH MITHRAKUMAR

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## Experience

### FOUNDER and MACHINE LEARNING ENGINEER

September 2018 – Current

Adhiraiyan AI Consulting

San Francisco, CA

- Designed and deployed multiple end to end Machine Learning models for early-stage startups.
  - Deployed a BigGAN model as a web app for a client from the entertainment industry.
  - Built an Object Detection model to detect the presence of pills for a healthcare startup.
  - Deployed in AWS an Object Detection model to detect various grades of cardboard for a recycling company.
  - Managed a team of three engineers to build and deploy a mobile traffic monitoring system using multiple object tracking algorithms on edge devices for a startup in Germany.
  - Built a Multi-lingual proof of concept Optical Character Recognition app for low resource languages (Tamil & Sinhala) for a bank in Sri Lanka for automatic check deposit.
- Advised founders, product managers and data scientists on framing machine learning problems within the business context and optimize for critical business metrics.

### DATA SCIENCE MENTOR

December 2018 – Current

Thinkful & Springboard

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 – November 2018

Data Science Retreat

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.

### COMPUTATIONAL RESEARCH ASSISTANT

January 2015 – January 2017

South Dakota State University

Brookings, SD

- Synthesized a novel magnetic material, analyzed efficiency and tested electronic properties of the material that led to a Journal paper in Applied Physics.
- Implemented a multi-layer perceptron in FPGA using Verilog.

## Education

Graduate Courses | Machine Learning, Deep Learning, Mathematics for Machine Learning, Intro to Computer Vision

**B.S. IN PHYSICS, emphasis Electrical Engineering** | SOUTH DAKOTA STATE UNIVERSITY | 2018

Courses | Digital Systems, Quantum Mechanics, Automatic Controls, Mathematical Physics, Linear Algebra, Scientific Computation, Algorithms.

Certifications | Machine Learning with TensorFlow on Google Cloud, **Google**.  
Data Engineering on Google Cloud Platform, **Google**.

## Projects (Available in GitHub)

### 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.

### TensorFlow Scientific

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

## Skills

- Programming Languages**- Python, Java, C, C++, JavaScript, Shell, SQL.
- Deep Learning Frameworks**- TensorFlow, PyTorch, Keras, Pandas, OpenCV.
- Machine Learning Frameworks** - Spark MLlib, SciKit-Learn, XGBoost, NumPy, SciPy, StatsModel.
- Database Management**- Hadoop, Spark, MongoDB, Google BigQuery, Mongoose, db2.
- Web Development**- HTML, CSS, Bootstrap, jQuery, Node.js, Express.js.