Deepak Ravikumar

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# **Education**

## Anna University

India

BACHELOR OF ENGINEERING IN PRODUCTION ENGINEERING, GPA: 7.8/10 July 2011 ‑ May 2015

**Skills**

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| **Machine Learning** | Logistic Regression, Decision tree, Random Forest, Gradient Descent, PCA, KNN, Naive Bayes, SVM |
| **Deep Learning** | CNN, Faster RCNN, UNET, RNN, LSTM, YOLO models, Attention models (BERT, Siameese Networks) |
| **Domains** | E-commerce, Supply chain, Healthcare, Geospatial |
| **Languages** | Python, VBA, C++, HTML, CSS, JavaScript, SQL, Pyspark, Selenium |
| **DataStores** | MySQL, DynamoDB, PostgreSQL, AWS S3, RedShift |
| **Frameworks** | Flask, Streamlit, TensorFlow, PyTorch, Keras, OpenCV, Pandas, NumPy, Matplotlib |
| **DevOps** | Docker, Kubernetes, Terraform, AWS CDK |
| **Tools** | Git, Github, Jira, Azure Devops, Heroku, VS code, Jupyter Notebook |
| **Cloud** | AWS (Pursuing Machine Learning - Speciality certification at CloudGuru), Azure |

# **Experience**

**Techmango Technologies** *April 2020 ‑ Present*

SENIOR DATA SCIENTIST

* Having real-time work experience in using more than 15+ services in AWS cloud like Lambda, Eventbridge, Stepfunction, EMR, ECR, SNS, SQS, Glue, Secrets Manager, RDS, RedShift, S3, Athena, SageMaker.
* Worked on distributed systems using Spark for transforming terrabytes of raw data into useful data.
* Have experience in end-to-end ML pipeline automation using MLOps frameworks and also have experience in CI/CD pipelines using GitHub actions.
* Deployed many ML applications by containerizing it using Docker and created custom models in ECR.
* Analyzed and reduced the cost of AWS glue by 90% using CloudWatch Metrics and SparkUI.
* Migrated memory-intense glue jobs to EMR to save overall cost by 95%.
* Created multiple chatbots using RASA NLP framework for IKEA client and deployed in Azure cloud.

**Amazon.com** *November 2015 ‑ March 2020*

APPLICATION ENGINEER

* Developed an web application using Flask for multiple projects such as Face Recognition, Activity Recognition & Number plate detection.
* Responsible for creating various AWS resources and developed a complete end-to-end ETL framework using AWS services.
* Designed, implemented and evaluated models to solve problems in computer vision like image classification, object detection & segmentation.
* Responsibilities includes intial research, planning the project, designing the product, creating ML models, and testing & productionizing.

# **Project**

**I2P pricing Model (Livingston Int.- Canada)** *September 2022 ‑ Ongoing*

TECH STACK: AWS(SAGEMAKER, S3, EVENTBRIGDE, IAM, ECR, EC2), PYTHON, JUPYTER NOTEBOOKS

* Objective is to create a model to predict prices based on clients and the number of products/shipments they clear through customs.
* We analyzed the data using EDA techniques and followed all data pre-processing steps like feature scaling, encoding, handling missing and duplicates values, multi-collinearity & handling data skewness.
* We used Sagemaker in-built algorithms like Linear Learner, XGBoost & MLP to train the ML model and finalized with XGBoost model.
* Built an Sagemaker Endpoint which will copy the model(tar) file from s3 to ECR(ec2) to start running the inference.

**E-commerce Chatbot (IKEA - Dubai)**

TECH STACK: AZURE, PYTHON, RASA FRAMEWORK, FLASK, HTML, CSS

* Objective is to create a chatbot for E-commerce client.
* Created a chatbot using RASA framework which is a popular framework and it is built to handle multiple queries from customer like product selection, order placement, order status etc and finally deployed using Azure cloud.

**Body Image Classification (Amazon.com - California)** *January 2019 ‑ March 2019*

TECH STACK: PYTORCH, PYTHON, HTML, CSS, BOOSTRAP, FLASK, DOCKER

* Objective is to classify image of person into 3 different category like fat, slim or muscled.
* As this is multi-class classification problem based on image, we went with CNN with resnet50 architecture with crossentropy loss.
* We could able to achieve f1-score about 0.85 which looked good.
* We finally built a flask app which takes input of an image & classifies image into fat/slim/muscled and outputs as JSON.

**Browse Node Classification (Amazon.com - Bangalore)** *May 2018 ‑ July 2018*

TECH STACK: KERAS, PYTHO, FLASK, HTML, CSS, BOOTSTRAP, HEROKU, DOCKER

* Objective to identify browse nodes based on the image and text.
* Created 2 models - one for predicting image using CNN technique and outputs a category like shoe/apparels/bags.
* Another one for predicting text using Natural language processing and outputs a category like shoes/apparels/bags.
* Combining 2 outputs and based on accuracy percentage, we identify the category of product.
* Once we identify the category, we can use browse node dump to find browse nodes for that particular category.

# Achievements

2021 **Awards**, Received Star Performer Award for Overall performance at Techmango Technologies. *India*

2020 **Hackathon**, Secured 3rd prize in Ramco systems hackathon event and got featured in TheHindu Newspaper *India*

2018 **Awards**, Received Einstein Award for Automating manual tasks using Python at Amazon.com *India*