Deepak Karkala

2+ years experience with Masters in Data Science, looking for positions in Machine Learning, AI and Data Science domains.

Portfolio GitHub Linkedin

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Education

2015 – 2018 **Master of Science**
EPFL, Lausanne Switzerland
Communication Systems

2007 – 2011 **Bachelor of Engineering**
RVCE, Bangalore India
Electronics and Communication

Projects

Image segmentation using Deep Learning for e-commerce applications — Aug 2020

The project aimed at using image segmentation for products on e-commerce websites. It involved creating dataset by scraping product images, using transfer learning on Tensorflow to fine-tune the pre-trained deep learning model to perform segmentation of products from images. The application was served using Flask and Docker on AWS. Report App Code

Predictive Modeling and Alternate Search Rankings for Airbnb — Sep 2020

The project aimed at predicting the price of an Airbnb listing given a number of features. The project also involved coming up with alternate search rankings based on listing vibe, aesthetic quality of listings photos and using A/B testing for comparing different search rankings. The application was served using Docker on AWS.
Predict-Report Predict App Search-Report Search App Code

Anomaly Detection in IoT Sensor Data — April 2018

This thesis project involved developing a predictive maintenance algorithm aimed at detecting the presence of abnormalities in heating energy consumption in apartments using data captured by IoT sensors. An interactive dashboard was developed and the alerts raised were then used by the maintenance team to trigger required corrective actions in advance, leading to predictive maintenance of the system. Thesis

Scene understanding using Deep Learning — July 2017

This project aimed to interpret the scene using deep learning algorithms. It involved detecting and localising the objects, determining the relations between objects in the image by training Convolutional Neural Networks using the PyTorch framework.

Recommender system using Matrix Factorization

This project aimed to predict the missing entries in the data matrix. An ensemble model was developed by combining Matrix factorisation model(ALS, CCD) with the nearest neighbor model and the results were compared with the baseline methods. Paper Code

Skills

Programming	Python, Java, JavaScript, HTML, CSS
Data Analytics	Numpy, Pandas, Spark, SQL, d3.js Flask, Docker, AWS, A/B Testing
Machine Learning	Scikit-learn, Tensorflow, Keras Deep Learning for Vision, NLP Predictive Modeling, Anomaly Detection Clustering, Recommender Systems

Work Experience

Jun 2018 – Present
eSMART Technologies — Renens Switzerland
Data Analytics Engineer
Developed a predictive maintenance system for Anomaly detection in IoT sensor data of apartments.

Feb 2017 – Jul 2017
NEC Labs America — Princeton USA
Machine Learning Research Intern
Worked on Object and Relationship detection algortihms for Scene understanding using Deep Learning in PyTorch.

Mar 2012 – May 2015
Signalchip Innovations — Bangalore India
Design Engineer
Joined the semiconductor startup as the fifth employee and was involved in design and development of Signal Processing algorithms for Wireless Communications - 3G (WCDMA) and 4G (LTE).

Jun 2011 – Feb 2012
Indian Institute of Science — Bangalore, India
Junior Research Fellow
Developed efficient algorithms for image reconstruction in Diffuse Optical Tomography using MATLAB.

Journal Publications

Medical Physics - 2012
Data-Resolution based Optimization of the Data-Collection Strategy for Near Infrared Diffuse Optical Tomography. Link

IEEE JSQTE - 2012
Mesh simplification based on edge collapsing could improve computational efficiency in near infrared optical tomographic imaging. Link

Patent

Method and system for symbol level interference cancellation at a receiver for multiuser detection. Link