MOHAMMAD MOEIN

Software Engineer - Machine learning Expert

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mohammadmoein

EXPERIENCE

AI Software Engineer
OTSALA.ai

Jan 2021 – May 2022

- Designed and developed a genetic-based algorithm to produce a building recipe using predefined LEGO bricks of a given volume.
- Developed real-time object detection models.
- Developed an analytics dashboard to summarize object detection models performance and interpretation.
- Python, Tensorflow, Pytorch, PyGAD, Dash, Mlflow, Pytest, Git.

Research Visitor
Johnson & Johnson

Jan 2020 – Oct 2020 | Beerse, BE

- Developing predictive drug toxicity model using several deep learning generative methods.
- Python, Tensorflow, Keras, Pandas, Git

Computer Vision Software Engineer
SKIDATA

Dec 2017 – Sep 2018 | Munich, DE

- Part of a team to implement a multi-class image classification using advanced deep learning methods to detect foods placed on a tray.
- Designed and implemented a framework to train object detection models automatically to serve the model in production. It significantly simplified the CV models deployment process for system engineers with a 2x speed up our model delivery.
- Designed and implemented an analysis tool to clean image datasets..
- Python, Tensorflow, Keras, Caffe, Bokeh, AIOHTTP, AWS, Git

Research Assistant
Fraunhofer AISEC

Dec. 2014 – Sep 2017 | Munich, DE

- Developed Large-scale classification models with concept drift adaptation for validating locations of cloud resources using network traffic data.
- Designed and implemented several ML algorithms to automatically verify that a cloud service performs within certain boundaries and conditions according to the set security policy.
- Java, Python, Sklearn, Numpy, Theano, Git

Android Software Engineer
Shiraz University

Jun. 2011 – Apr. 2013 | Shiraz, IR

- Developed a SIP (Session Initiation Protocol) app for android to allow users to communicate and call in the area that classical communication infrastructure lacks. Java is used to develop the android client.
- Java, C#, TortoiseSVN

STRENGTHS

Python | Machine Learning | Deep Learning | Convex Optimization | Compute Vision | Research & Development | Software Design | Teamwork | Motivator & Activator | Restorative

SKILLS & PACKAGES

ML Pipeline | Data Analysis | OOP

Pandas | Numpy | Tensorflow | Keras | Sklearn | Dash | PyQt | OpenCV | Git | Docker | linux | pytest | SCRUM

EDUCATION

Ph.D. in Computer Science
Aalto University

Oct 2018 – Ongoing

Thesis: Predictive Generative Modeling for Drug Toxicity

M.Sc. in Computer Science
Technical University of Munich (TUM)

Oct. 2013 – Apr. 2017

Thesis: Optimizing Spectral Embeddings for Robust Clustering

B.Sc. in Software Engineering
Shiraz University

Sep. 2008 – Jun. 2013

Thesis: Interior Point Algorithm for Linear Programming

PUBLICATIONS

Conference Proceedings

- Stephanow, P., Moein, M., & Banse, C. (2017). Continuous location validation of cloud service components. In *2017 ieee international conference on cloud computing technology and science (cloudcom)* (pp. 255–262). IEEE.

SELECTED PROJECTS

Optimizing Spectral Embedding for Robust Clustering

Technical University of Munich

Sep. 2016 – Apr. 2017 Munich, DE

- The focus of this thesis is to design algorithms that are more robust to noise and outliers by performing joint optimization on graphs and spectral embedding. This work attempts to develop a flexible framework towards unifying clustering and adjacency learning. Minimize the spectral clustering objective (trace minimization) using split- based methods such as Bregman and ADMM, instead of eigenvalue decomposition to find a better embedding to represent data

Convex Optimization for Computer vision

Technical University of Munich

Apr. 2016 - Jun. 2016 Munich, DE

- First order methods to solve convex problems in the application of image segmentation and inpainting
- (Sub-) Gradient descent, Proximal operator and ADMM methods

Automatic Knee Cartilage Segmentation

Technical University of Munich

Dec. 2014 - Apr. 2015 Munich, DE

- Implemented in python and caffe framework. It addresses a well known problem of multi- class image segmentation of medical data using deep convolution neural network (report)

Secure Presenter

Fraunhofer AISEC

Jun. 2014 – Sep. 2014 Munich, DE

- Set up a secure ad-hoc network between android devices by exchanging keys with Wifi-Direct technology and then transfer encrypted PDF or image in P2P manner.

Tracking and Detection in Computer Vision

Technical University of Munich

Oct. 2013 – Feb. 2014 Munich, DE

- Object detection with SIFT, SURF and HOG
- Camera tracking and Image Stitching using DLT and RANSAC
- Nonlinear Optimization for Pose estimation
- Object tracker with Mean-Shift

Course Scheduling: Genetic Algorithm

Shiraz University

Oct. 2010 – Feb. 2011 Shiraz, IR

- A program aimed for generating CSE department semester timetable based on the preferred professors time slot. It uses genetic algorithm techniques to satisfy hard and soft constraints of problem. It was tested on real data and generating efficient and acceptable 10 answers.

LANGUAGES

English ●●●●●

German ●○○○○

EXTRACURRICULAR

Board member

Studentischer Kulturtreff der Iraner

2015 – Ongoing Munich, DE

- Nonprofit organization that aims to provide Iranian university students with essential information and help as they establish their life in Munich.
- The focus is to present numerous affordable community activities, cultural events and consulting services, i.e. apartment hunting, job application workshops, art classes, movie screenings, etc.