Sahar Yousefi

PhD,
Artificial Intelligence (AI)

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Dutch Citizenship

Social Network

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Skills

- Python ●●●●
- Tensorflow ●●●●
- Pytorch ●●●●
- C/C++ ●●●○
- Docker ●●●●
- Jira ●●●●
- Git ●●●●
- Kubeflow ●●●●
- Cuda ●●●●
- Linux ●●●○

Profile

AI specialist with years of experience as a computer vision engineer and Linux-based software developer in industry. Strong ability to work as part of a team and independently. Have developed a responsible approach to any undertaken task.

Working Experience

May 2022 present — **Lead Computer Vision Engineer** — Prime Vision

- Led a team of four (3 AI engineers and 1 intern) focusing on building an LLM-based form understanding product. The new solution managed to reduce about 70% of the labor work for digitizing the forms. I conducted research on sparsifying the LLM-based model by 60%, employing model distillation approaches. This enables its deployment on memory-constrained devices (published in NeurIPS2023).
- Led two individuals (1 NLP engineer and 1 intern) specializing in NLP research to expand the company's portfolio in the healthcare language processing domain.

Tools: LLMs, Pytorch, ONNX, CICD pipeline

Jul 2021 May 2022 — **Head of AI Development** — AutoFill Technologies

Led a team of 3 AI experts in the development of AI pipelines for abnormally detection, deploy-able on both cloud and edge devices.

Feb 2021 July 2021 — **Machine Vision Engineer** — AutoFill Technologies

AI-based pipeline designer: Developing AI based pipelines for automotive and rail industries including object detection, segmentation, OCR, classification in video sequences.

Tools: Tensorflow, Pytorch, OpenCV, Kubeflow, Cuda, GCP, Edge devices (Jetson NX and AGX), Docker, Jira

Dec 2018 Feb 2021 — **Deep Learning Researcher** — Leiden University Medical Center (LUMC)

Image reconstruction and acceleration: A winner of the FastMRI challenge (NeurIPS 2019) worldwide with collaboration of **PHILIPS** CO.(more info.)

Image to image translation: Designed a semi-supervised multi-task deep learning network in Tensorflow for image to image translation. (more info.)

Image classification: Led a team of 2 to design a multi-task deep learning network in Tensorflow for image classification. (more info.)

Image synthesizing and reconstruction: Modeled a deep learning network to accelerate 4D data reconstruction in Tensorflow. (more info.)

Semantic segmentation: Implemented a 3D deep learning model for image segmentation. (more info.)

Tools: Tensorflow, PyTorch, BSL/FSL, Elastix, Matlab, MeVisLab, Oracle grid engine (OGS/OGE), GCP

Feb 2009 Oct 2013 — **Linux-based Programmer and Developer** — Iran co.

Localized package manager: Implemented a package manager in Debian distribution of Linux to secure the Linux packages by defining a structure and designing a mechanism for installation and maintenance.

Tools: Linux, Shell script, Python, C/C++, PostgressSQL, Jira, PyQt

Surveillance system: Implemented a simulator for a real-time surveillance system. Implemented a decision making component for a real−time surveillance system in order to select a task depends on the inputs.

Tools: Linux, Shell script, Python, C/C++, PostgressSQL, Jira, PyQt

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Languages

- Persian ●●●●
- English ●●●○
- Dutch ●○○○

Extra curricular

- Women in Technlogoy membership 2022
- 1st place at FastMRI challenge, NeuroIPS, Vancouver, Canada, 2019
- Awarded WIML travel grant, NeuroIPS, Vancouver, Canada, 2019
- Program committee member of **://WBIR2018.nl**
- Reviewer: WIML2019, MICCAI2019, MICCAI2020, IEEE Transactions on Medical Imaging, Biomedical Signal Processing & Control journal, Transactions on Image Processing journal, ICSPIS 2016

Oct 2008 – Dec 2010 **Research Assistant** — Shahrood University of Technology

Semantic segmentation: Designed two methods based on Markov Random Fields and optimization algorithms (Ant colony optimization and genetic algorithm) to speed up the convergence >6x. (more info.)

Tools: Integrated Matlab & C, Probabilistic Graphical Models

Oct 2007 – Oct 2008 **Linux-based Programmer and Developer** — Xarrin Advanced Technologies Co. & ITRC

Designed and developed an IoT system: Implemented a peer-to-peer system including multiple clients, with the ability of being mini-servers, and a central server, on Universal Plug & Play (UPnP) protocols for managing data in a smart house system.

Linux localization: Localized Open Office, which allows the administrators and users to select the preferences based on the platform, the regional zone, like language and time zone, in the kernel and end-user levels.

Tools: C/C++, .Net framework, Linux programming, Shell script, Jira

Education

Oct 2013 – Dec 2018 **PhD** — Sharif University of Technology
Major: Artificial Intelligence
Thesis: Dynamic texture segmentation in video sequences

Oct 2008 – Feb 2009 **M.Sc.**
Major: Artificial Intelligence
Thesis: Brain Tumor segmentation in MRIs

Oct 2003 – Jun 2008 **B.Sc.**
Major: Software engineering
Thesis: Designing and developing a Universal Plug and Play (UPnP) system

Selected Publications (See more at Google scholar)

2023 **DONUT-hole: DONUT Sparsification by Harnessing Knowledge and Optimizing Learning Efficiency**
WANT@ NeurIPS 2023

2021 **Esophageal Tumor Segmentation in CT Images Using a Dilated Dense Attention Unet (DDAUnet)**
IEEE Access

2020 **Adaptive-CS-Net: An Adaptive Intelligence Algorithm for Undersampled Knee MRI Reconstruction: Application to the 2019 fastMRI Challenge**
Presented at FastMRI challenge, NeurIPS 2019

2019 **Fast Dynamic Perfusion and Angiography Reconstruction using an end-to-end 3D deep learning model**
Machine Learning for Medical Image Reconstruction, Springer

2019 **A Novel Motion Detection Method Using 3D Discrete Wavelet Transform**
IEEE Transactions on Circuits and Systems for Video Technology

2018 **Esophageal Gross Tumor Volume Segmentation Using a 3D deep learning model**
MICCAI,Springer, Cham

Professional references

References are available upon request.