Fatima Dehghan

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 Seoul, Korea

A progressive, passionate and curious individual with three years' experience as a research assistant. Able to contribute perform research in *Machine Learning*, *Deep Learning*, and *Computer Vision* fields to gain the cutting-edge skills and grow my professional knowledge to become a useful researcher to society.

RESEARCH INTERESTS

 Machine Learning   Deep Learning   Computer Vision   Medical Imaging

EDUCATION

March 2020 **present**	**Yonsei University - Seoul, Korea** *PhD.,Electronic & Electrical Engineering* Fields : › Machine Learning › Computer Vision & Medical Imaging
September 2017 **August 2019**	**Hongik University - Seoul, Korea** *M.S.,Electronic & Electrical Engineering* Thesis : LPR & MCE Systems Implementation Using Mask R-CNN GPA : 4.44/4.5 (99.33/100)
September 2011 **August 2015**	**Yazd University - Yazd, Iran** *B.S.,Computer Software Engineering* Thesis : Clothing & Accessories E-Commerce Website Design GPA : 15.30/20 (76.5/100) Last 60 credits 17.25/20 (86.25/100)

RESEARCH EXPERIENCE

March 2020 **June 2021**	**Research Assistant at MAI lab, Yonsei University** Project : Visual Speech Recognition Using Fusion of Facial Motion and Geometric Features Machine Learning Computer Vision
September 2017 **August 2019**	**Research Assistant at AI & Robotics Lab, Hongik University** Projects : › Implementing a Korean License Plate Recognition System Using Mask R-CNN › Developing a Household Object(s) Moving Cost Estimation System Using Deep Learning Deep Learning Computer Vision
July 2016 **December 2016**	**Research Assistant at Control Lab, IRAN SSP** Project : Control of Industrial Motor Temperature Using a Nonlinear Model-free Neuro-fuzzy ARX Algorithm System Identification System Modeling Control

📖 PUBLICATIONS

2022	**Automatic Korean License Plate Recognition Using Deep Learning Methods**
	Fatemeh Dehghan , Cho Seongwon
	Applied Intelligence Journal (APIN) (Under Submission)

2017	**Design Nonlinear Model-free Neuro-fuzzy ARX Algorithm to Control of System's Temperature**
	Fatemeh Dehghan , Farzin Piltan , Maryam Sarostad , Nasri B.Sulaiman
	Journal of Smart Home (IJSH) indexed by SCOPUS, Volume 11, Number 1, PP 139-153

2016	**Nonlinear model-free control and ARX modeling of industrial motor**
	Maryam Sarostad , Farzin Piltan , Fatemeh Dehghan , Nasri B.Sulaiman
	Journal of Smart Home (IJSH) indexed by SCOPUS, Volume 10, Number 12, PP 63-76

💻 PROJECTS

✔ *Research Projects*

Silent Communication, SAMSUNG Company   2020 - 2021

Implementing a visual speech recognition system using the fusion of facial motion and geometric features.

`Python` `Dlib` `OpenCV` `Keras` `Tensorflow`

License Plate Recognition, UBIwave Company   2018 - 2019

Developing a desktop application that can recognize Korean license plates, classify their types and read them in both images and video streams

`Python` `OpenCV` `Keras` `Tensorflow` `Mask-RCNN`

Moving Cost Estimation, Hongik University   2017 - 2018

Implementing an android application (client) and a desktop application (server) to estimate household objects moving cost. The Android application sends the object photo to the desktop application. In the server, the volume of the object is measured using a deep learning model and then the moving cost is measured using the object volume and some other information such as the address, moving date, etc.

`Python` `Java` `XML` `OpenCV` `Keras` `Tensorflow` `Mask-RCNN`

Intelligent System Identification, IRAN SSP   2016 - 2017

Designing a nonlinear & linear controller to control the system's temperature and improve energy efficiency using neuro-fuzzy Auto Regressive eXternal model input (ARX) methodology.

`MATLAB` `Simulink`

Clothing & Accessories E-Commerce Website Design (BS Thesis Project)   2015 - 2016

Designing and implementing an online retail website for clothes and accessories.

`Joomla` `PHP` `HTML` `CSS`

✔ *Notable Course Projects*

Software Digital Camera   2020

Designing an Image Signal Processor (ISP) of software digital camera for a raw input image (Bayer CFA subsampled). Tasks : Color interpolation with two algorithms (Pei's method & Kimmel's method), noise Reduction on Y domain,Gamma correction on Y domain and Contrast Enhancement/Sharpening on Y domain while keeping UV color information.

`C/C++`

Visual Text to Speech System (VTTS) 2020

A system that generates computer-synthesized speech waveforms corresponding to a text in an image.
Python OpenCV Tesseract

Continual Learning Using 16-layer VGGnet 2018

Adding the new task, face recognition, on top of a VGGNet which is already developed to classify images using Feature extraction, Fine Tuning and Learning Without Forgetting methods. The goal is to evaluate whether a model using these methods can learn a new task (face recognition) while preserving performance on old tasks (image classification).
Python Keras Tensorflow

CIFAR 10 Classification using Knowledge Distillation method 2018

Building a CIFAR 10 classifier by transferring knowledge from a VGGNet-16 architecture to a small customized CNN using the Knowledge Distillation method.
Python Keras Tensorflow

Face Recognition 2017

Developing a face recognition system that can recognize faces in both images and video streams.
Python OpenCV Dlib

Scientific Calculator Android App 2015

Building a scientific calculator in which several mathematical operations such as addition, subtraction, square root, factorial, and many more perform.
Java XML

Police+10 Website Design 2015

Designing and implementing a website for police+10 to automate their electronic services.
PHP MySQL HTML CSS

Emergency Android App 2014

An application designed for emergency situations. It consists of all emergency phone numbers (of 5 different countries) every person should know and the user can simply call emergency services using this app.
Java XML

Chat Console Application 2014

Multiple clients connect to a server and they can chat, just like in a chat room. There are two public and private chat options.
Socket Programming Java Python

University Education System 2013

Implementing an education system that can manage students, instructors, and courses information.
Java

Search Engine 2012

Developing a desktop application to search files or folders in a computer.
Java

✻ Course & Certifications

2021   **Machine Learning** by Stanford University, Prof. Andrew Ng

2021   **Fundamentals of Digital Image & Video Processing** by Northwestern University, Prof. Aggelos K. Katsaggelos

2021	**MRI Fundamentals** by KAIST University, Prof. Sung-Hong Park
2021	**Deep Leaning** by DeepLearning.AI, Prof. Andrew Ng

🏆 Honors & Awards

2020 - 2021	**Excellent International Student Scholarship, 21,000$** The Office of International Affairs, Yonsei University
2020	**Research Scholarship, 6,000$** Dept. of Electronic & Electrical Eng., Yonsei University
2017 - 2019	**Excellent Student Global Scholarship, 28,000$** The Graduate School, Hongik University
2013 - 2015	**Ranked 1ˢᵗ, in GPA among 70 students of Computer Software Engineering** (During four last semesters) Dept. of Computer Engineering, Yazd University

🗾 Languages

Persian (native) ●●●●●
English (toefl ibt:99) ●●●●●
Turkish ●●●●○
Korean ●●●●○
Arabic ●●○○○

✛ Strengths

◇ Patient
◇ Passionate
◇ Open-minded
◇ Flexibility & Adaptability
◇ Teamwork
◇ Responsible

☰ Skills

Programming Language	Python, Java, MATLAB, C/C++, LaTeX, PHP, HTML, CSS, XML
Library	Tensorflow, Keras, Pytorch, OpenCV, Dlib
IDEs	PyCharm, Intellij Idea, MATLAB, Android Studio, QT, Microsoft Visual Studio, Git, Adobe Dreamweaver, NetBeansL
Database & CMS	Microsoft SQL Server, MySQL, SQLite, Joomla, WordPress
Operating System	Linux (Pop OS, Ubuntu, Debian), Windows
Others	Microsoft Office, LibreOffice, Photoshop, Adobe Premiere, Adobe After Effects, Corel Video Studio Ultimate, AAA Logo, Sothink
Art	Piano, Clip Making, Logo Design, Nail Implant & Design, Sculpting With Polymer Clay
Sport	Swimming, Squash, Yuga, Tai Chi