Fatima Dehghan

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🎓 EDUCATION

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 (Last 60 credits) : 17.25/20 (86.25/100)

💼 RESEARCH EXPERIENCE

March 2020 **June 2021**	**Researcher at MAI lab, Yonsei University** Project : Visual Speech Recognition Using Fusion of Facial Motions and Geometric Features `Machine Learning` `Computer Vision`
September 2017 **August 2019**	**Researcher 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**	**Researcher 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 motions 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`
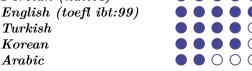
🏆 Honors & Awards

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

✳ Course & Certifications

2021-22	**Machine Learning** by Stanford University, Prof. Andrew Ng
2021-22	**Fundamentals of Digital Image & Video Processing** by Northwestern University, Prof. Aggelos K. Katsaggelos
2021-22	**MRI Fundamentals** by KAIST University, Prof. Sung-Hong Park
2021-22	**Deep Leaning** by DeepLearning.AI, Prof. Andrew Ng

🗛 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