

HAMED HAGHIGHI

AI Researcher

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EDUCATION

University of Tehran

M.Sc. in Artificial Intelligence

Thesis: "Ambient VAE: an unsupervised method for image restoration"

2016 - 2019

Tehran, Iran

- Total GPA: 18.85/20 (2nd student in the major)

Isfahan University of Technology

B.Sc. in Software Engineering

Thesis: "Implementing a real-time algorithm for face recognition on Android devices"

2012 - 2016

Isfahan, Iran

- Total GPA: 17.45/20 (2nd student in the major)

Shahid Ejei (NODET*) High School

High school diploma in Mathematics and Physics

*NODET is National Organization for Development of Exceptional Talents

2008 - 2012

Isfahan, Iran

- Total GPA: 19.5/20

RESEARCH INTERESTS

- Generative models
- Deep Learning & Machine Learning
- Computer Vision & Computer Graphics
- Audio signal processing & NLP
- Artificial Intelligence

PUBLICATIONS

Working Papers

- ITALIC: Iterative and Attentive Lossless Image Compression. For submission to the *IEEE conference on Computer Vision and Pattern Recognition (CVPR)*
- SampleTransformer: scaling transformers for high fidelity music generation. For submission to the top upcoming machine learning conference.

Under Review Paper

- Haghighi, H.; Rashno, A.; Tahani, B.; Kafieh, R. (2019) "Automatic evaluation of Crown Preparation using Image Processing Technique: A substitute to Faculty Scoring in Dental Education" submitted to *European Journal of Dental Education*

AWARDS AND HONORS



Ranked 2nd out of students of Artificial Intelligence major, University of Tehran, 2018



Awarded full scholarship for the graduate program in Artificial Intelligence, University of Tehran, 2016 - 2018



Placed 29th among 15000 students in Computer Science National University Entrance Exam for M.Sc. Degree, 2016



Ranked 2nd out of students of Software Engineering major, Isfahan University of Technology, 2016



Granted merit-based admission to M.Sc. program at ECE department of Isfahan University of Technology, 2016



Ranked 2nd Team in medical startup weekend contest, University of Isfahan, 2014



Ranked 1st Team in ACM-ICPC Isfahan University of Technology verification contest, 2013



Awarded full scholarship for the undergraduate program in Software Engineering, Isfahan University of Technology, 2012 - 2016



Accepted as an exceptional talent in NODET high school and intermediate school entrance exam in Iran, 2005 - 2012

TEACHING ASSISTANTSHIP

Pattern Recognition

- Dr. Babak Nadjar Aarabi Spring 2019

Data Analytics

- Dr. Mohammad Amin Sadeghi Fall 2018

Computer Vision

- Dr. Reshad Hosseini Fall 2018

Bio-inspired Computing

- Dr. Masoud Asadpour Spring 2018

Pattern Recognition

- Dr. Babak Nadjar Aarabi Fall 2017

SELECTED PROJECTS

Ambient VAE: an unsupervised method for image restoration | M.Sc. Thesis

- Research on using variational auto-encoder as an unsupervised image enhancer.

SampleTransformer: modeling high fidelity music in raw audio domain | Research Project

- Research on capturing long range dependencies of music in audio domain through U-Net like transformer architecture.

ITALIC: Iterative and ATtentive Lossless Image Compression | Research Project

- Research on designing fast recursive model for lossless image compression task using attention mechanism.

E-puck Robot Localization | Advanced Robotics

- Implementation of particle filter algorithm for real-world problem of E-puck robot localization.

Statistical Analysis of DOTA2 Matches | Statistical Inference

- Descriptive and predictive analytics of kaggle DOTA2 matches' dataset using R language.

Solving Minesweeper Game using Reinforcement Learning | Machine Learning

- Looking at Minesweeper game as a RL problem and solve it using Q-learning method.

Automatic evaluation of Crown Preparation using Image Processing Technique | MISIP Internship

- Design and implementation of innovative software for evaluating crown preparation using QT and OpenCV library.

Snake Game on FPGA | FPGA

- Implementation of famous snake game on FPGA using Verilog language

Bidoneh: Online Auction for sell and buy used stuffs | E-commerce

- Design and implementation of an Android application for online bidding auction.

EXPERIENCE

AI Researcher

Machine Learning and Computational Modeling Lab

📅 Fall 2019 - Present 📍 Tehran, Iran

- Research on modeling long range sequences using transformer architecture.

SOFTWARE ENGINEER

Medical Image and Signal Processing Research Center.

📅 Summer 2016 📍 Isfahan, Iran

- Designing innovative software for automatic evaluation of crown preparation using image processing technique.

TECHNICAL SKILLS

Python, C/C++, Pytorch,
Tensorflow, OpenCV, R



Matlab, OpenGL, Caffe, C#,
Java, SQL



Verilog, PHP, Unity



LANGUAGES

Persian - Native Language

English - Fluent

- TOEFL iBT: **Total 101** (Reading: 27, Listening: 27, Speaking: 23, Writing: 24)
- GRE: **Total 316** (Verbal: 149, Quant: 167, Analytical Writing: 3.0)

REFERENCES

Dr. Reshad Hosseini

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✉ School of Electrical and Computer Engineering, University of Tehran

Dr. Mohammad Amin Sadeghi

@ asadeghi@ut.ac.ir

✉ School of Electrical and Computer Engineering, University of Tehran

Dr. Rahele Kafieh

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✉ School of Advanced Medical Technologies, Isfahan University of Medical Sciences