HAMED HAGHIGHI

AI Researcher

@ hhaghighi.real@gmail.com +9362954527 Tehran, Iran hamedhaghighi.github.io github.com/hamedhaghighi

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 (2^{nd} 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 (2^{nd} 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 2^{nd}*** 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 29^{th}*** among 15000 students in Computer Science National University Entrance Exam for M.Sc. Degree, 2016
- ***Ranked 2^{nd}*** 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 2^{nd}*** Team in medical startup weekend contest, University of Isfahan, 2014
- ***Ranked 1^{st}*** 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 varational auto-encoders for the unsupervised image restoration task.

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.

Automatic evaluation of Crown Preparation using Image Processing Technique | MISP Internship
- Design and implementation of innovative software for evaluating crown preparation using QT and OpenCV library.

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 Inferenece
- 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.

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
@ reshad.hosseini@ut.ac.ir
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
@ rahele.kafieh@charite.de
School of Advanced Medical Technologies, Isfahan University of Medical Sciences