

Hossein Souri

CONTACT INFORMATION

Homewood Campus, Johns Hopkins University
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EDUCATION

Johns Hopkins University (JHU), MD, USA

August 2020 - Present

Ph.D. in Computer Science

Advisor: Dr. Rama Chellappa

Research Area: Machine Learning, Computer Vision, Artificial Intelligence

I'm currently working on Adversarial Attacks and Defenses models.

University of Maryland, College Park (UMD), MD, USA

August 2018 - August 2020

M.S. in Electrical and Computer Engineering (GPA: **3.86/4**)

Advisor: Dr. Rama Chellappa

Research: Computer Vision, Machine Learning

Paper: **ATFaceGAN: Single Face Image Restoration and Recognition from Atmospheric Turbulence**

University of Tehran (UT), Tehran, Iran

2013 - 2017

B.S. in Electrical and Computer Engineering

GPA: 18.66/20 (**3.95/4**)

Advisor: Dr. Hamid Soltanian-Zadeh

HONORS AND AWARDS

-Clark School Distinguished Graduate Fellowships, University of Maryland, 2018-2019

-Ranked **5th (top 3%)** among 250 students of Electrical and Computer Engineering, University of Tehran, 2013-2017

-Awarded scholarship as an honor student for three consecutive years, University of Tehran, 2015-2017

-Ranked **12th** in the 21st Scientific Olympiad for University Students in Electrical and Computer Engineering and qualified to pursue graduate studies in any Iranian university, 2016

-Semi-finalist in Iranain National Mathematics and Physics Olympiad, 2011

PUBLICATIONS

**Google
Scholar
Semantic
Scholar**

- P. Khorramshahi*, **H. Souri***, R. Chellappa, and S. Feizi, "**GANs with variational entropy regularizers: Applications in mitigating the mode-collapse issue**," *arXiv preprint arXiv:2009.11921*, 2020. [\[Link\]](#)
- P. Dhar, J. Gleason, **H. Souri**, C. D. Castillo, and R. Chellappa, "**Towards Gender-Neutral Face Descriptors for Mitigating Bias in Face Recognition**," 2020. [\[Link\]](#)
- P. Dhar, J. Gleason, **H. Souri**, C. D. Castillo, and R. Chellappa, "**An adversarial learning algorithm for mitigating gender bias in face recognition**," 2020. [\[Link\]](#)
- C. P. Lau, **H. Souri**, and R. Chellappa, "**Atfacegan: Single face imagerestoration and recognition from atmospheric turbulence**," *arXiv preprint arXiv:1910.03119*, *Accepted as Oral presentation for FG 2020*. [\[Link\]](#)

RESEARCH EXPERIENCE

- **Research Assistant, Artificial Intelligence for Engineering and Medicine Lab (AIEM)**, Johns Hopkins University Aug 2020 - Present
Research: developing novel adversarial attacks and defences models.
- **Research Assistant, University of Maryland Institute for Advanced Computer Studies (UMIACS)**, University of Maryland, College Park Aug 2018 - Aug 2020
Research: fairness in face recognition systems, image restoration, improving GANs, understanding deep features.
- **B. Sc. Thesis Project: Emotional State Recognition From EEG Signal Using Machine Learning Models** 2017
Emotional state recognition and classification from EEG signals using wavelet-based and power-spectrum based feature extraction methods and MLP, SVM, and KNN classifiers

	<ul style="list-style-type: none"> • Research Assistant, Secure Communication Laboratory 2017 - 2018 Acoustic Scene Detection using matching pursuit algorithm for extracting time-frequency features and classifying using MLP and SVM classifiers and hidden Markov model (HMM)
WORK EXPERIENCE	<ul style="list-style-type: none"> • Computer Networks Lab, University of Tehran, Iran 2016 Internship, Internet of Things Mentor - Dr. Vahid Shah-Mansouri Design and programming a smart home control and monitor system using Zigbee wireless technology • High Voltage Lab, University of Tehran, Iran 2015 Internship, Programming Mentor - Dr. Hossein Mohseni Design and programming a Tesla Coil calculator
TECHNICAL SKILLS	<ul style="list-style-type: none"> • <i>Programming Languages:</i> Python, C/C++, Java, MATLAB, R, Assembly • <i>Technical Tools:</i> PyTorch, TensorFlow, MATLAB, OpenCV, Keras, PySpark, Dask, CUDA
RELEVANT COURSES	<ul style="list-style-type: none"> • Advanced Object-Oriented Programming • Algorithms and Data Structures • Parallel Programming • Machine Learning • Advanced Computer Vision • Advanced Computer Graphics • Advanced Numerical Optimization • Random Processes
TEACHING ASSISTANT EXPERIENCE	Machine Intelligence, Computing Systems and Programming, Computer Networks, Signal and Systems, Probability and Statistics, Communication Systems, Digital Signal Processing.
SELECTED PROJECTS Github	<ul style="list-style-type: none"> • TensorFlow implementation of modern neural network architectures, such as ResNet, DenseNet, and ResNext. Code • PyTorch implementation of a Deep Convolutional Neural Network model for detecting the parameters of a circle presents inside a given image under the presence of noise. Code • Boundary detection and object recognition using classical and deep learning methods. Code • Python end-to-end pipeline to swap faces in videos and images. Code • Python implementation of classical and unsupervised Structure from Motion(SfM). Code • Python implementation of classical machine learning tools such as LDA, PCA, k-NN, Bayesian classifiers, SVM, MLP, and CNN. Code • PySpark implementation of k-means clustering. Code • C++ Nori base implemetation of Ray Tracing Acceleration Data Structures, Point Lights, Monte Carlo Sampling, Area Lights, Micro-facet BRDF, Dielectrics, and Path Tracing. Code • Parallel implementation of image filtering using OpenMP and MPI implementation of Cellular Automata. Code • Generation of HTML for web pages using Java language. Code • Java implementation of concurrent systems using multi-threading, GUI implementation of Black-jack game, trees, graphs, hashmaps, sets, and linked lists. Code • C implementation of secure file system with linked allocation, Quarto game, adaptive filters. Code