

Hossein Souri

CONTACT INFORMATION

Personal Website, LinkedIn, Twitter, GitHub ✉ E-mail: hsouri1@jhu.edu

EMPLOYMENT

- **Research Assistant, Artificial Intelligence for Engineering and Medicine Lab (AIEM)**, Johns Hopkins University Aug 2020 - Present

Research: adversarial robustness, poisoning and backdoor attacks, self-supervised and transfer learning, segmentation, object tracking, federated learning, and fairness in face recognition

- **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, GANs, deep features analysis.

EDUCATION

Johns Hopkins University (JHU), MD, USA September 2020 - Present

Ph.D. in Computer Science

Advisors: Prof. Rama Chellappa, Prof. Tom Goldstein

University of Maryland, College Park (UMD), MD, USA August 2018 - August 2020

M.S. in Electrical and Computer Engineering

Advisor: Prof. Rama Chellappa

University of Tehran (UT), Tehran, Iran 2013 - 2017

B.S. in Electrical and Computer Engineering

PUBLICATIONS AND ARXIV PREPRINTS [Google Scholar](#) [Semantic Scholar](#)

- Ravid Schwartz-Ziv, Micah Goldblum, **Hossein Souri**, Sanyam Kapoor, Chen Zhu, Yann LeCun, Andrew Gordon Wilson.
“**Pre-Train Your Loss: Easy Bayesian Transfer Learning with Informative Priors**”. *arXiv preprint arXiv:2205.10279* (2022). [\[Link\]](#)
- Jiang Liu, Chun Pong Lau, **Hossein Souri**, Soheil Feizi, Rama Chellappa.
“**Mutual Adversarial Training: Learning together is better than going alone**”. *IEEE Transactions on Information Forensics and Security* (2022). [\[Link\]](#)
- Valeriia Cherepanova, Steven Reich, Samuel Dooley, **Hossein Souri**, Micah Goldblum, Tom Goldstein.
“**A Deep Dive into Dataset Imbalance and Bias in Face Identification**”. *arXiv preprint arXiv:2203.08235* (2022). [\[Link\]](#)
- Renkun Ni, Manli Shu, **Hossein Souri**, Micah Goldblum, Tom Goldstein
“**The Close Relationship Between Contrastive Learning and Meta-Learning**”. *International Conference on Learning Representations*. 2021. [\[Link\]](#)
- **Hossein Souri**, Pirazh Khorramshahi, Chun Pong Lau, Micah Goldblum, and Rama Chellappa.
“**Identification of Attack-Specific Signatures in Adversarial Examples**”. *arXiv preprint arXiv:2110.06802* (2021). [\[Link\]](#)
- **Hossein Souri**, Liam Fowl, Rama Chellappa, Micah Goldblum, and Tom Goldstein.
“**Sleeper agent: Scalable hidden trigger backdoors for neural networks trained from scratch**”. *arXiv preprint arXiv:2106.08970* (2021). [\[Link\]](#)
- Chun Pong Lau, Jiang Liu, **Hossein Souri**, Wei-An Lin, Soheil Feizi, Rama Chellappa.
“**Interpolated Joint Space Adversarial Training for Robust and Generalizable Defenses**”. *arXiv preprint arXiv:2112.06323* (2021). [\[Link\]](#)

- Pirazh Khorramshahi*, **Hossein Souri***, Rama Chellappa, Soheil Feizi.
“**GANs with variational entropy regularizers: Applications in mitigating the mode-collapse issue**”. *arXiv preprint arXiv:2009.11921* (2020). [\[Link\]](#)
- Prithviraj Dhar, Joshua Gleason, **Hossein Souri**, Carlos D. Castillo, Rama Chellappa.
“**Towards Gender-Neutral Face Descriptors for Mitigating Bias in Face Recognition**”. *arXiv preprint arXiv:2006.07845* (2020). [\[Link\]](#)
- Prithviraj Dhar, Joshua Gleason, **Hossein Souri**, Carlos D. Castillo, Rama Chellappa.
“**An adversarial learning algorithm for mitigating gender bias in face recognition**”. (2020). [\[Link\]](#)
- Chun Pong Lau, **Hossein Souri**, Rama Chellappa.
“**Atfacegan: Single face imagerestoration and recognition from atmospheric turbulence**”. *2020 15th IEEE International Conference on Automatic Face and Gesture Recognition (FG 2020)*. IEEE, 2020. [\[Link\]](#)
Accepted as Oral presentation for FG 2020.

COMMUNITY INVOLVEMENT

- *Conference Reviewer*: CVPR, NeurIPS, ECCV, WACV
- *Journal Reviewer*: Pattern Recognition Journal

TECHNICAL SKILLS

- *Programming Languages*: Python, C/C++, Java, MATLAB
- *Technical Tools*: PyTorch, TensorFlow, OpenCV, Keras, PySpark, Dask, MATLAB

RELEVANT COURSES

- Machine Learning
- Advanced Numerical Optimization
- Algorithms and Data Structures
- Parallel Programming
- Advanced Computer Vision
- Advanced Computer Graphics
- Advanced Object-Oriented Programming
- Random Processes

TEACHING ASSISTANT EXPERIENCE

Machine Intelligence, Machine Perception, Computing Systems and Programming, Computer Networks, Signal and Systems, Probability and Statistics, Communication Systems, Digital Signal Processing.

SELECTED PROJECTS [Github](#)

- 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](#)
- Deep Learning Based Denoiser for Images Rendered by Monte Carlo Sampling. [Code](#)