SADJAD ASGHARI-ESFEDEN

PERSONAL INFORMATION	235 Walden St. Cambridge, MA 02140 Open to relocate/work remotely	*Homepage:* `sadjadasghari.github.io` *E-mail:* `asgharisajjad@gmail.com` *Cell phone:* +1 (617) 390-3381
RESEARCH INTERESTS	**Computer Vision** Robotic Perception	Deep Learning Video Analysis

WORK AND RESEARCH EXPERIENCES

◇ **Newmetrix Inc.**
Machine Learning Team, Cambridge, MA., USA.
Lead Computer Vision Engineer   Apr. 2018 – Present
- *Productizing Computer Vision models (Object Detection, Video Analysis, Image Classification and Segmentation) for tens of visual tags in the field of construction (aimed for safety and progress tracking of job-sites), while constantly improving models in an active-learning approach.*
- *Started and lead a Computer Vision team, including a few Computer Vision engineers, which generates the core features of the product.*
- *Worked with both traditional and 3D computer vision, as well as deep learning approaches to find solutions for detecting workers' safety in job-sites (e.g. blind spot detection for construction equipment, facial mask and social distancing detection, PPE and worker pose detection, worker activity detection in videos, etc.).*

◇ **Walt Disney Imagineering (WDI) Inc.**
Research and Development Team, Glendale, CA., USA.
R&D Computer Vision Intern - Supervisor: **Dr. Douglas A. Fidaleo**   Summer 2016
- *Project Kiwi*
Worked on perception module for autonomous characters to recognize and re-identify surrounding objects and localize them in 3D.

◇ **Hoyos Labs. Inc.**
Cambridge Innovation Center, Cambridge, MA., USA.
Research and Development Intern - Computer Vision Group   Summer 2014
- *Face Liveness Detection (Biometrics)*
We designed and developed several real-time tests to determine face liveness using smart phones' front camera (developed for iOS and Android).

◇ **Cognitive Systems Laboratory (CSL)**
Department of ECE., Northeastern University, Boston, MA., USA.
Research Assistant - Supervisor: **Prof. Deniz Erdogmus**   2019 – 2022
- *Human-Robot Interaction*
- *3D Object Localization*

◇ **Robust Systems Laboratory (RSL)**
Department of ECE., Northeastern University, Boston, MA., USA.
Research Assistant - Supervisor: **Prof. Octavia Camps**   Jan. 2015 – Apr. 2018
- *Pedestrian Detection and Person Re-Identification*
- *Human Action Recognition*

◇ **Synergetic Media Learning (SMILE) Laboratory**
Department of ECE., Northeastern University, Boston, MA., USA.
Research Assistant - Supervisor: **Dr. Yun Raymond Fu**   Sep. 2013 – Dec. 2014

- *Emotion Detection*
  We detect emotions from EEG signals and facial expressions in response to videos. Using power spectral features from EEG signals and facial landmarks, we detect valence (pleasantness) levels for each frame continuously. We also study the effect of the changes in the stimulus (audio and visual features) on the emotional response of viewers.

⋄ **Social Networks Laboratory**
School of ECE., University of Tehran, Tehran, Iran.
Training and Research Assistant - Supervisor: **Dr. Masoud Asadpour**
- *Mining Social Network of Persian Blogosphere*   Sep. 2011 – Jan. 2012

Internship - Supervisor: **Dr. Masoud Asadpour**   Jun. 2011 – Aug. 2011

EDUCATION

⋄ **Department of Electrical and Computer Engineering, Northeastern University**
    Ph.D. in Computer Engineering (Computer Vision & ML)   Sep. 2013 – Apr. 2018
- **Thesis Title:** SpatioTemporal Prediction of Object Handover for Human Robot Collaboration.

    M.Sc. in Computer Engineering   Sep. 2013 – May 2015
- **Thesis Title:** Dynamic Motion Representation for Human Action Recognition in Videos.

⋄ **School of Electrical and Computer Engineering, University of Tehran**
    B.Sc. in Computer Engineering (Major: Software Engineering)   Sep. 2008 – Aug. 2013
- **Thesis Title:** Towards a Biologically Inspired Universal Dictionary of Visual Features for Object Recognition.

COMPUTER SKILLS

- *Programming Tools and Languages:* PyTorch, TensorFlow, Caffe, MatConvNet, C++, Python, OpenCV, Android Programming, MATLAB.

- *Applications:* LaTeX, VIM.

PUBLICATIONS

- **S. Asghari-Esfeden**, G. Strenge, K. Lockwood, Y. Bicer, T. Imbiriba, M. Furmanek, M. Yarossi, E. Tunik, T. Padir, and D. Erdogmus, **"Real-Time Object Localization for Human-Robot Handover, "** PETRA, 2023 *(under review)*.

- K. Lockwood, Y. Bicer, **S. Asghari-Esfeden**, T. Zhu, M. Furmanek, M. Mangalam, G. Strenge, T. Imbiriba, M. Yarossi, T. Padir, D. Erdogmus, and E. Tunik, **"Leveraging Submovements for Prediction and Trajectory Planning for Human-Robot Handover, "** PETRA, 2022 *(Best Student Paper Award)*.

- **S. Asghari-Esfeden**, Mario Sznaier, Octavia Camps, **"Dynamic Motion Representation for Human Action Recognition, "** WACV, 2020.

- M. Gou, X. Zhang, A. Rates-Borras, **S. Asghari-Esfeden**, M. Sznaier, O. Camps, **"Person Re-identification in Appearance Impaired Scenarios, "** British Machine Vision Conference (BMVC), 2016.

- M. Soleymani, **S. Asghari-Esfeden**, Y. Fu, M. Pantic, **"Inter-modality interaction between EEG signals and facial expressions for continuous valence detection,"** IEEE Transactions on Affective Computing, 2016 *(Best Paper Award of 2016-17)*.

- M. Soleymani, **S. Asghari-Esfeden**, M. Pantic, Y. Fu, **"Continuous Emotion Detection Using EEG Signals and Facial Expressions,"** IEEE International Conference on Multimedia and Expo (ICME), 2014 (Oral presentation).