

# NASIM SOULY

[Nasim.souly@gmail.com](mailto:Nasim.souly@gmail.com) +14077299445 [www.nasimsouly.com](http://www.nasimsouly.com)

## Skills Summary

- Computer Vision, Image and Video processing, Deep Learning and Machine Learning algorithms
- Programming: Python, C/C++, MATLAB, C#, JAVA
- Database: MySQL, MS SQL Server,
- Others: PyTorch, Tensorflow, Keras, Linux, Git, CPLEX, Gurobi, OpenCV, Docker

## Experience

### May 2018- Now Volkswagen Group of America, Innovation Center California

- Machine learning and Perception
- Design and Develop Generative Adversarial Networks (GAN)
- 3D Object Shape Analysis using Deep Neural Networks, Point Cloud Deep Neural Networks, 3D Convolutional Neural Network, Graph Neural Networks
- Semantic Segmentation, Instance Segmentation
- Video Classification and Event Detection using CNN and LSTM
- Time series regression using Deep Neural Networks, Multi Modal Learning, Attention models and Transformers
- Sensor Fusion (Camera and Lidar), Lidar Generation and Super Resolution

### Nov 2017- April 2018 DigitalOcean Cloud Computing, Research Scientist

- Digital Asset management in storage using visual search and object detection in images
- User-Process Segmentation

### 2011- 2017 Center for Research in Computer vision (CRCV) at University of Central Florida (UCF)

- Graduate Research Assistant in CRCV, UCF
- Graduate Teacher Assistant in Computer Science department (Object Oriented Programming course), UCF
- Design and Develop Machine Learning Algorithms using MATLAB, Python and C++ to solve computer vision problems.
- Using Deep learning frameworks (Caffe, Chainer, Torch) in computer vision applications (semantic segmentation, recognition and detection)

### May 2010 –July 2011 Tosan Intelligent Data Miners , Software Engineer

- Designing & Developing Data Warehouse

- Data Clustering and Data Mining C#.NET

## Projects

- Action Recognition in unconstrained videos using kinematic features and sparse representation, DARPA funded project.
- Object detection and segmentation in images using DPM model and saliency detection with Markov Random Field DARPA funded project.
- Saliency Detection in Videos DARPA funded project.
- Semantic Segmentation using Random Forest and Constraint Modeling.
- Image and EEG data classification using Convolutional Neural Network (Caffe) and Recurrent Neural Network (LSTM in Torch).
- ATR (detection, super-resolution and recognition) in IR videos using deep learning Lockheed Martin funded project.
- Semantic Segmentation Using GAN (Chainer/Theano framework)

## Publications

- *Wei Huang Xu, Nasim Souly, Pratik Prahajan Brahma* **Reliability of GAN Generated Data to Train and Validate Perception Systems for Autonomous Vehicles**, Published in Autonomous Vehicle Vision Workshop, WACV 2021
- *Nasim Souly, Concetto Spampinato and Mubarak Shah*, **Semi Supervised Semantic Segmentation Using Generative Adversarial Network**, Published in ICCV 2017
- *Concetto Spampinato, Simone Palazzo, Isaak Kavasidis, Daniela Giordano, Nasim Souly and Mubarak Shah*, **Deep Learning Human Mind for Automated Visual Classification**, Published (Oral presentation) in CVPR 2017.
- *Nasim Souly and Mubarak Shah*, **Scene Labeling Through Knowledge-Based Rules Employing Constrained Integer Programming**, Submitted to CVIU, <https://arxiv.org/abs/1608.05104>
- *Nasim Souly and Mubarak Shah*, **Scene Labeling Using Sparse Precision Matrix**, Published in CVPR 2016.
- *N Souly, G Z Papadakis; U. Teomete, U Bagci.*, **A New Saliency Metric for Precise Denoising PET Images for Better Visualization and Accurate Segmentation**, oral presentation RSNA 2015.
- *Nasim Souly and Mubarak Shah*, **Visual Saliency Detection Using Group Lasso Regularization in Videos of Natural Scenes**, Published in Int Journal of Computer Vision (IJCV), August 2015.
- *Subhabrata Bhattacharya, Nasim Souly and Mubarak Shah*, **Covariance of Motion and Appearance Features for Spatio Temporal Recognition Tasks**, arXiv:1606.05355, 2013
- *Nasim Souly and Reza Safabakhsh*, **Human Recognition using Face Profile and Ear based on Active Shape Model and Linear Discriminate Analysis**, Published in 14<sup>th</sup> Iranian Conference on Computer Engineering, Amirkabir University, 2009.
- *Nasim Souly and Saeid Shiry*, **Texture Classification Using SVM Fusion**, Published in 16<sup>th</sup> Iranian Conference on Electrical Engineering, Tarbiat Modares University Tehran, 2008.

## Education

- **PhD in Computer Science**  
University of Central Florida , 2017  
**Thesis:** Saliency Detection and Semantic Segmentation
- **Master of Science Degree in Artificial intelligence**  
Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran.  
**Thesis:** Human recognition using face and ear images.
- **Bachelor of Science Degree in Software Engineering**  
Iran University of Science and Technology (Elm-o-Sanat), Tehran, Iran.  
**Thesis:** Intelligent analytical reporting using OLAP and Data warehousing