# Jahandar Jahanipour

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| CONTACT INFO. | 8300 El Mundo St. Unit 703, Houston, TX, 77054<br>(832) 444-7994<br>jahandar.jahani@gmail.com | jjahanip.github.io<br>www.easy-tensorflow.com |

**SUMMARY OF QUALIFICATIONS**
- Hands on experience with machine learning and deep learning techniques using famous libraries such as TensorFlow.
- Expert in design of user-friendly Graphical User Interfaces (GUIs).
- Hands on experience with massive datasets

**PROFESSIONAL EXPERIENCE**

**I. University of Houston, Houston, Texas** — Aug 2015 – Present
**Research Assistant**
- Discover and analyze patterns using clustering techniques such as hierarchical clustering and the Dirichlet process mixture models in massive biomedical dataset of size > 300GB
- Utilize deep networks for abstract feature extraction and unsupervised cell type cluster labeling with > 88% accuracy
- Validate and edit the segmentation results of whole brain images using object detection methods such as Faster-RCNN with > 90% recall to increase the accuracy of the segmentation algorithms
- Use pattern recognition methods such as outlier detection to detect errors with AUC > 70%
- Design GUI to visualize the mapping between the analysis results and the raw data
- Detect and classify cells in whole rat brain images with AUC of > 96%
- Develop a comprehensive pipeline for fluorescence signal correction of multi-spectral wide field fluorescence microscopic images correcting for <u>auto-fluorescence</u>, <u>photo-bleaching</u>, <u>non-uniform illumination</u>, <u>tissue folds</u>, <u>bleed-through</u> and <u>molecular co-localization</u>

**II. National Institue of Health** — May 2018 – Aug 2018
**Pre-Doc Fellow**
- Develop algorithms for unmixing immunohistochemistry multi-spectral images
- Develop cell detection pipeline for whole brain image datasets with AUC > 96%

**III. Imam Khomeini International University, Qazvin, IRI** — Sep 2011 – Jan 2012
**Lab. Designer and Instructor**
- Design of instruction, quizzes, utilization and presentation of microwave laboratory
- Taught related experiments of the microwave communication course to more than 50 students

**EDUCATION**

**University of Houston**, Houston, TX
Ph.D., Electrical Engineering; **GPA 4** — Expected Aug 2019
*Relevant Courses:* Stochastic Processes, Machine Learning, Data Mining, Bio-photonics, GPU Computing, Automatic Learning (Deep Learning)

**Isfahan University of Technology**, Isfahan, IRI
M.S., Electrical Engineering — Sep 2012 – Jul 2014

**TECHNICAL SKILLS**
- **Programming:** Python | MATLAB | C++ | CUDA | CMake (Familiar with: R and Lua)
- **Tools and Libraries:** TensorFlow | scikit-learn | scikit-image | Qt | Deep Learning tooklit (MATLAB)
- **Environments and Editors:** Microsoft Visual Studio | PyCharm | Jupyter Notebook | Linux
- **Version Control:** Git
- **Typesetting Applications:** Microsoft Office, LaTeX
- **Bilingual:** English, Persian

**PUBLICATIONS**
- S. Berisha, M. Lotfollahi, J. Jahanipour, I. Gurcan, M. Walsh, R. Bhargava, H. V. Nguyen, D. Mayerich. "Deep learning for FTIR histology: leveraging spatial and spectral features with convolutional neural networks " Analyst, doi: 10.1039/C8AN01495G
- S. Ahmadian, B. Vahidi, J. Jahanipour, S.H. Hosseinian, H. Rastegar "Price Restricted Optimal Bidding Model Using Derated Sensitivity Factors by Considering Risk Concept." IET Generation, Transmission & Distribution. doi: 10.2 (2016): 310-324.
- J. Jahanipour, K. Hajipour "Design of a NLFM Radar Signal by Different Use of Price Model." 17th Iranian student conference on electrical engineering.

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| POSTER PRESENTATIONS | • J. Jahanipour, X. Li, A. Sedlock, B. Roysam , J. Smith, D. Maric. "Quantitative In-situ Image Analysis in Highly Multiplexed Fluorescence IHC Image Datasets of Rat Brain" NINDS DIR Scientific Retreat |
| | • J. Jahanipour, X. Li, H.Lu, J. Redell, P. Dash, D. Maric, B. Roysam. "Computational profiling of astrocytes' activation patterns after mild fluid percussion injury" Mission Connect Annual Scientific Symposium |
| | • J. Jahanipour, H.V.Nguyen, J. Redell, P. Dash, D. Maric, B. Roysam. "Deep Hierarchical Profiling & Pattern Discovery: Application to Whole Brain Rat Slices After Traumatic Brain Injury" Graduate Research Conference, ECE, UH |

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| INVITED TALKS & WORKSHOPS | • "Introduction to Machine Learning and Deep Learning" 2019 Data Science in Materials Workshop April 2019 |
| | • "Deep Learning with TensorFlow Workshop" UH Math department        Spring 2019 |
| | • "Deep Learning with TensorFlow Workshop" UH Math department        Spring 2018 |
| | • "Deep Learning with TensorFlow Workshop" UH CACDS        Spring 2018 |
| | • "Applications of Deep Learning in Biomedical Datasets and Workshop on Deep Learning with TensorFlow" IEEE EMBS Houston Chapter        Dec 2017 |

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| TEACHING EXPERIENCE | **Teaching Assistant** |
| | • Electronics Lab, University of Houston        Fall 2015 - Spring 2016 |
| | **Instructor** |
| | • Microwave Lab, Imam Khomeini International University        Fall 2011 - Spring 2012 |

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| PROFESSIONAL SERVICE | • Reviewer of IEEE International Symposium on Biomedical Imaging (ISBI) |
| | • Reviewer of Journal of Modern Power Systems and Clear Energy (MPCE) |
| | • Reviewer of Bioengineering Journal of MDPI |
| | • Reviewer of IEEE Transactions on Industrial Informatics |

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| HONORS & AWARDS | • 2nd best poster presentation award in TBI area - Mission Connect Annual Scientific Symposium 2017 |
| | • Fellow at Center for Advanced Computing and Data Systems at University of Houston 2017 - 2018 |
| | • Graduate Tuition Fellowship, University of Houston College of Engineering        2015 - 2018 |
| | • Presidential Fellowship, University of Houston College of Engineering        2015 - 2017 |
| | • Ranked top 5% in nationwide electrical engineering Graduate entrance exam in Iran        2012 |

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| ACTIVITIES & HOBBIES | • Vice president of Iranian Community at University of Houston organization for two years from 2015 |
| | • Organizing cultural events such as Nowrooz celebration and folklore music concerts |
| | • Playing piano |