ATOUSA TORABI

45 Lansing Street Apt. 809
San Francisco, CA 94105
Email: torabi.atousa@gmail.com
Personal Page: http://torabiatousa.wix.com/atousa
Disney Page: http://www.disneyresearch.com/people/atousa-torabi/
Google Scholar:
https://scholar.google.ca/citations?user=LX2QWBYAAAAJ
Mobile: 1-412-539-5040

SUMMARY

I am interested in machine learning and especially deep learning to build interesting artificial intelligence applications. I have experience on Convolutional Neural Networks (CNNs) and Recurrent Neural Networks (RNNs) models and their applications in Computer Vision, Natural Language Processing and their intersection. I worked on numbers of interesting projects from multimodal video surveillance systems to human activity recognition in the videos and video description with natural language for visually impaired people (link to my project page [link]). In the recent years, I was focused on building platform for 1) understanding visual media and describing visual elements with natural language, video annotation, and search 2) understanding human activities in the videos.

RESEARCH EXPERIENCE

July 2015 – July 2017

Postdoctoral Associate Researcher
Disney Research Pittsburgh (DRP) Pittsburgh, PA
Director: Leonid Sigal

- Applied **deep learning models** for human activities recognition and highlighting, visual media understanding, movie tagging and search with natural language (link to my project page [link])
- Built a phrase-based **movie search** presented demo at **Disney science fair 2016**
- Co-organized Describing and Understanding Videos & Large Scale Movie Description Challenge (LSMDC) workshop [link] in conjuction with ECCV 2016 and ICCV 2017, Leading **Movie annotation and retrieval challenge** [link] and **movie multiple-choice test challenge** [link]
- Working with **Maker Studios (Disney Business Unit)**
- **Patent application filed** on "Systems and Methods for Identifying Activities and/or Events in Media Contents Based on Object Data and Scene Data"
- **Patent application filed** on "Joint Heterogeneous Language-Vision Embeddings for Video Shot Tagging and Search"

Sept. 2017 – Feb. 2017

Research visitor
Pixar Animation Studio Emeryville, CA
Directors: Tony Derose and Mark Meyer

- Applied **RNNs models** for automatic artist-friendly animation adjustment tool
- **Pixar Technical memo** on "Learning Knot Placement for Character animation"

Aug. 2012 – July 2015

Postdoctoral researcher

Montreal Institute for Learning Algorithms (MILA), Université de Montréal
Directors: Aaron Courville and Chris Pal

- Worked with deep neural networks models such as **Convolutional Neural Networks (CNNs) and Recurrent Neural Networks (RNNs)**
- Worked on project **movie description for visually impaired people**. We introduced the first neural network attention-based video description model.
- Built the **largest movie description dataset** in collaboration with Max Planck institute
- Participated in writing an **invited book chapter** on human action recognition.
- Co-organized Describing and Understanding Videos & Large Scale Movie Description Challenge (LSMDC) workshop [link]. In conjunction with ICCV 2015
- Research results were published in conference paper at **ICCV2015**, **ICMI2013**, **arXiv** and journal paper in **IJCV**

Aug. 2006 – April 2012

Research assistant

École Polytechnique de Montréal
Director: Guillaume-Alexandre Bilodeau

- Worked on **video registration** solutions for thermal-visible visual surveillance systems using close-range and far-range camera settings.
- Developed a feed-back scheme for simultaneous video registration and people tracking in a pair of thermal-visible far-range videos.
- Developed a novel multimodal stereo registration method using **Local Self Similarity (LSS) and Belief Propagation (BP)** for thermal-visible close-range surveillance cameras.
- Published conference papers at **CVPR2010**, **CVPR2011**, and **ROSE2011** and **two** journal papers in **CVIU** and **one** journal paper in **PR**.
- Worked on a medical project for **automatic epilepsy (seizure) detection** in infants. Developed a **particle filter** for tracking a laboratory rat and measuring its body temperature using thermal cameras. Research results were published in conference paper at ISVC'08 and **IPCV'10** and a journal paper in **MVAP**.
- Developed an online **multiple human tracking** algorithm for visual video surveillance systems. Research results were published in conference paper at **CRV'08** and **CRV'09** and a journal paper in **IMAVIS**.

May 2011 – Dec. 2012

Engage project with iWatchLife Co.

École Polytechnique de Montréal

- Developed a prototype for **semantic image segmentation and object labeling** for an automatic visual surveillance systems. joint work with other lab mate
- Research results were published in conference paper at **ISIVC**.

AREAS OF EXPERTY

Artificial Intelligence, Machine Learning, Deep Learning, Computer Vision, Natural Language Processing

IT SKILLS

Programming Languages:	Python, Matlab, C++
Operating Systems:	Windows, Linux
Software/tools:	OpenCV, Scikit-learn, NLTK, Stanford Part-Of-Speech (POS), LibSVM, SVMlight, git, VLfeat, ffmpeg
Deep Learning Framework:	Theano, Pylearn2, Blocks, Fuel, Caffe, Tensor Flow (recently) and Pytorch (recently)

LANGUAGE SKILLS

English, French, and Farsi

EDUCATION

Jan. 2008 - April 2012	**Doctor of Philosophy in Computer Engineering,** École Polytechnique de Montréal, **Thesis:** Video registration for multimodal stereo surveillance systems, **Director:** Guillaume-Alexandre Bilodeau
Aug. 2005 – Dec. 2007	**Master of Applied Science in Computer Engineering,** École Polytechnique de Montréal, **Thesis:** An algorithm for multiple object tracking**, Director:** Guillaume-Alexandre Bilodeau
Sept. 2000 – April 2005	**Bachelor of Applied Science in Computer Science,** Shahid Beheshti University, Tehran **Top-Ranked Student in Iranian University Nation Wide Exam** Ranked in top %1, in high school studies

PATENT APLLICATIONS

- **US Patent application** on "Systems and Methods for Identifying Activities and/or Events in Media Contents Based on Object Data and Scene Data"
- **US patent application** on "Joint Heterogeneous Language-Vision Embeddings for Video Tagging and Search"

PUBLICATIONS

Please check out my Google Scholar at https://scholar.google.ca/citations?user=LX2QWBYAAAAJ