Mahdieh Abbasi

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An enthusiastic and result-driven machine learning researcher with ~**8 years** practical and proven research and development experiences in Machine Learning (ML) and computer vision. Working with several companies by researching and implementing deep learning methods for their projects. Collaborating nationally and internationally with peer researchers on different research projects (research papers). Passionate and dedicated to make life of all worldwide people easier by using AI, ML and their wide applications. Now, I am a research assistant at IID (Institute Intelligence and Data).

EDUCATIONS

- **Doctorate**, Electrical and Computer Engineering, **Université Laval** (UL) 2015-2020
  Institute Intelligence and Data (IID), Québec, Canada
  Thesis Title: Toward Robust Deep Neural Networks
  Supervisor: Prof. Christian Gagné (a MILA professor)
  GPA: 3.53/4

- **Master of Science**, Artificial Intelligence, **Alzahra University** 2010-2012
  Digital Media Lab (DML), Tehran, Iran
  Thesis Title: 3D Human Pose Estimation
  Supervisor: Prof. H. Reza Rabiee (Sharif University of Technology)
  GPA: 16.87/20

- **Bachelor of Science**, Computer Science, **Sharif University of Technology** (SUT) 2005-2010
  DML, Tehran, Iran
  B.Sc. Project: Community Detection in Social Networks
  Supervisor: Prof. H. Reza Rabiee
  GPA: 16.02/20

AWARDS & DISTINCTIONS

- **Best Paper Award**, 33rd Canadian Conference on Artificial Intelligence (CAI), 2020
  Ottawa, Canada
- **Travel Award**, International Joint Conference on Artificial Intelligence (IJCAI), 2019
  Macao, China
- **Award Otis-Lalonde in Artificial Vision**, 2016,2017
  UL, Canada
  (2000CA$ Awarded two times for the papers published in 3DVision IEEE & ICLR-W)

- **MITACS Fellowship**, E Machine Learning 2017
  UMR (Unité Mixte de Recherche), Québec, Canada
- **Graduate Fellowship,** UL, Québec ,Canada 2015,2016
- **Accepted to attend Deep Learning Summer School** 2016
  Université de Montreal, Montreal, Canada (**acceptance rate 30%**)

- Accepted in the best technology university in Iran (SUT) as ranked 2005
  among top 1% among almost 500,000 participants in the national university entrance exam

COMPUTER-RELATED SKILLS

- **Programming Languages**: Python (proficient level), Java, Matlab, C++
- **Python Packages (proficient level)**: sikit-learn, sklearn, scipy, numpy, matplotlib
- **Deep Learning Libs. (proficient level)**: Theano, Lasagne, TensoreFlow, Pytorch
- **Command-line OS** : Linux (Ubuntu), Mac OS
- **Distributed cluster-computing**: CalculQuebec (working with clusters of GPUs)
- **Related Applications*:*** Latex, Git, Docker, SQL Server 2012, MySQL

INDUSTRIAL PROJECTS

- **Data Anonymization and Synthesis** Summer 2020
  10th Problem Solving Workshop, Montreal, Canada
  In a team of researchers, research on data privacy problem introduced by Desjardins and Bank of Canada.

- **ML for community-based health-care systems** Winter 2020
  Research Assistant at Family Medicine, McGill University, Montreal, Canada

- **Robust Object Detector for partially-labeled datasets** 2019-2020
  UL's CVSL and Thales, Québec, Canada
  Designing and implementing a framework (using Pytorch) for generating automatically labels for the missed-labels objects in order to train a robust object detector with high generalization performance.

- **Hockey player identification by Jersey number recognition** Summer 2018
  Stradigi AI company, Montreal, Canada
  During 4 months of this summer internship, I devised and implemented (using Tensorflow) a pipeline based on weakly supervised (without having labelled bounding-boxes) deep neural networks for automatically localizing the jersey number in a given hockey player image, then recognizing it.

PUBLICATIONS

- **M. Abbasi**, D. Laurandeau, C. Gagné, "Self-supervised Robust Object Detectors from Partially Labelled Datasets", https://arxiv.org/abs/2005.11549.

- **M. Abbasi,** A. Rajabi, C. Gagne, R. Bobba, "Toward Adversarial Robustness by Diversity in an Ensemble of Specialized Deep Neural Networks "**,** Long paper in **Canadian Conference on AI**, 2020 [**Best paper award and oral presentation**].

- **M. Abbasi**, C. Shui, A. Rajabi, C. Gagne, R. Bobba, "Towards metrics for differentiating Out-of-Distribution sets ", **NeurIPS** Workshop on Safety and Robustness in Decision-Making, 2019, and accepted in European Conference on Artificial Intelligence (**ECAI)**, 2020 [**oral presentation at ECAI, acceptance rate ~26%**].

- C. Shui, **M. Abbasi**, L.E. Robitaille, B. Wang, C. Gagné, "A Principled Approach for Learning Task Similarity in Multitask Learning", International Joint Conference on Artificial Intelligence (**IJCAI**) 2019 [**poster, acceptance rate ~18%**].

- **M. Abbasi**, A. Rajabi, A.S. Mozafari, R.B. Bobba, C. Gagné, "Controlling Over-generalization and its Effect on Adversarial Examples Generation and Detection", arXiv: 1808.08282, 2018.

- **M. Abbasi**, A. Rajabi, C. Gagné, R. B. Bobba, "Towards Dependable Deep Convolutional Neural Networks (CNNs) with Out-Distribution Learning", Dependable and Secure Machine Learning (DSML), co-located with Dependable System Networks (**DSN**), 2018.

- **M. Abbasi**, and C. Gagné. "Robustness to Adversarial Examples through an Ensemble of Specialists." International Conference on Learning Representations (**ICLR**) Workshop, 2017.

- F. Kiaee, C. Gagné, **M.Abbasi**, "Alternating Direction Method of Multipliers for Sparse Convolutional Neural Networks.", arXiv:1708.04788, 2017

- **M. Abbasi**, H. R. Rabiee, and C. Gagné. "Monocular 3D Human Pose Estimation with a Semi-supervised Graph-based Method." International Conference on **3DVision**, IEEE, 2015. [**oral presentation with 15% acceptance rate**]

PRESENTATIONS & TALKS

- **Virtually Talk at European Conference on Artificial Intelligence**, Santiago de Compostela, Spain, 2020
- **Poster Presentation at NeurIPS Workshop**, Vancouver, Canada, 2019.
- **Poster Presentation**, **Montreal AI Symposium**, Montreal, Canada, 2018.
- **Poster Presentation**, **Montreal AI symposium**, Montreal, Canada, 2017.
- **Poster Presentation**, **ICLR**, Toulon, France, 2017.
- **Talk and Poster Presentation**, **3DVision(IEEE)**, Lyon, France, 2015.

TEACHING EXPERIENCES

- **Lecturer**, Fundamental Concepts of Databases, Spring 2014
  Shahid Bahonar Univesity of Kerman, Iran
- **Lecturer**, Computer Programming, Summer 2013
  Shadid Bahonar University of Kerman, Iran

- **Lecturer**, Modern Information Retrieval, Spring 2013
  Azad University, Kerman, Iran

- **Teaching Assistant**, Pattern Recognition, Spring 2012, 2011
  Sharif University of Technology, and Al-zahra University, Tehran, Iran

SERVICES

- Reviewer:
  - Pattern Recognition Letters, ICLR2019, NeurIPS2018, NeurIPS2017

LANGUAGES

- English: Advanced (TOFEL 91/120 and ILETS 6.5/9)
- French: Intermediate
- Persian: mother tongue

REFEREES

- **Christian Gagné**
  Full Professor, Electrical and Computer Engineering (ECE) Department, UL
  christian.gagne@gel.ulaval.ca

- **Denis Laurendeau**
  Full Professor, ECE Department, UL
  denis.Laurendeau@gel.ulaval.ca

- **Hamid Reza Rabiee**
  Full Professor, Computer Engineering Department, SUT
  rabiee@sharif.edu