

Ali Hejazizo | Curriculum Vitae


University of Alberta—Department of Computer Science

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RESEARCH INTERESTS

- Machine Learning
- Natural Language Processing

EDUCATION

- **Master of Science** May, 2016–Present
 *University of Alberta* Edmonton-Canada
 - Computer Science May, 2017–2019 (Expected)
 - GPA: 4/4 via 9 credits
 - Electrical and Computer Engineering May, 2016–2017
 - GPA: 3.9/4 via 9 credits
- **Bachelor of Science** 2011–2015
 *Amirkabir University of Technology* Tehran-Iran
 - Electrical and Computer Engineering
 - Major: Power Systems
 - Minor: Electronics
 - GPA: 4/4

HONORS

- Ranked 1st in Electrical Engineering, Power Group, among more than 30 students, Amirkabir University of Technology, Tehran, Iran.
- Ranked 121st in university entrance exam, among more than 300,000 participant [Summer 2011].
- Exempted from university entrance exam for M.Sc. program and offered M.Sc. program from both Sharif and Amirkabir University of Technology.
- Permitted to study Electronics as a minor (This permission is only awarded to talented students, introduced by the Exceptional Talents Office).
- Granted admission from Talented Student Office of Amirkabir University of Technology for graduate study.

INTERNSHIP

- Investigation, detection and identification of abnormalities in customers' consumption patterns in power distribution systems, using Data Mining methods such as K-Means, PSO, Fuzzy, and SFLA algorithms, in order to reduce Nontechnical Losses.
 - Supervisor: Dr. Hosseini

PUBLICATION

Hejazizo, A. , Azad, S. P. , & Van Hertem, D.. (2015). Interoperability of Protection Systems in High Voltage Direct Current (HVDC) Networks. In *CIGRE Canada Conference - Future Power Systems and Grid Resiliency* (pp. 1-6). October.

PROJECTS

In progress:

- Mapping Macroscopic Brain Connectomes via Multidimensional Encoding, Learning, and Optimization using dMRI brain images.
 - Mapping onnectomes for one part of the brain, the arcuate fasciculus, using extremely high-dimensional sparse tensors.
 - Loading data and visualization in Matlab
 - Encoding, learning, and optimization in C using multithreading with OpenMP, and GPU parallel computing
 - Supervisor: Dr. Martha White
- Question Answering System Implementation with Memory Networks.
 - Step 1: Rewriting the question into one or more equivalent forms (paraphrases).
 - Step 2: Compiling questions into query templates.
 - Step 3: Logical query rewrite (based on the RDF graph).
 - Step 4: Ranking the answers.
 - Supervisor: Dr. Denilson Barbosa

Completed:

- Diagnosis of Alzheimer's Disease Based on Structural MRI Images using Machine Learning Techniques.
 - Step 1: Preprocessing MRI images using Freesurfer tools.
 - Step 2: Feature extraction.
 - Step 3: Applying machine learning techniques for diagnosis task.
 - Supervisor: Dr. Jörg Sander
- Implementation of model compression with teacher-student method on MNIST dataset using Tensorflow.
 - Supervisor: Dr. Nilanjan Ray
- Evaluation of machine learning classifiers in the task of passengers' survival prediction on titanic dataset.
 - Step 1: Visualization.
 - Step 2: Preprocessing data, in particular handling missing value.
 - Step 3: Applying three different machine learning classifier, namely logistic regression, neural network, and SVM.
 - Step 4: Applying statistically significance tests to evaluate classifiers' results.
 - Instructor: Dr. Martha White
- Efficient keyword and phrase retrieval for the boolean and vector space models. This project includes:
 - Building an inverted index to enable fast document retrieval.
 - Boolean and vector space model retrieval.
 - Zone indexing and scoring.
 - Supervisor: Dr. Denilson Barbosa
- Implementing Telegram Application Robots using Telebot API.
Implemented in Python using SQLite database.
 - @autstackbot:
 - In this project, I have implemented a Telegram Bot so that students can send questions, receive answers, mark correct answers as accepted, etc. The environment is continuously improving to have all functionalities of Stackoverflow website.
 - Users are currently over 150 students.
 - @python_compile_bot: This robot receives commands from users and interprets them in python language, then shows the result in a neat and beautiful format.
- RS232 protocol implementation.
 - The project includes two GUI in MFC and PyQt to send and receive data, respectively.
 - Supervisor: Dr. Jahanshahi

Courses

- | | |
|--|---|
| ○  Machine Learning [Fall 2017] | ○  Knowledge Discovery and Data Mining [Fall 2017] |
| - A+ | - A |
| - Instructor: Dr. Martha White | - Instructor: Dr. Jörg Sander |

- Advanced Programming [Winter 2015]
 - A+
 - Instructor: Dr. Amir Jahanshahi
- Information Retrieval [Winter 2018]
 - In Progress
 - Instructor: Dr. Denilson Barbosa
- Knowledge Graph [Winter 2018]
 - In Progress
 - Instructor: Dr. Denilson Barbosa
- Visual Recognition (Deep Learning) [Winter 2018]
 - Auditor
 - Instructor: Dr. Nilanjan Ray

ONLINE COURSES

✓ Completed:

Coursera

- Machine Learning
- Getting Started with Python
- Python Data Structures
- Using Python to Access Web Data
- Using Databases with Python
- The Data Scientist's Toolbox

- Introduction to HTML5
- Introduction to CSS3
- Interactivity with JavaScript

Udemy

- Introduction to Parallel Programming using GPGPU and CUDA

⚙ In progress:

Udemy

- Complete Guide to TensorFlow for Deep Learning with Python
- Deep Learning A-Z™: Hands-On Artificial Neural Networks
- Deep Learning: Recurrent Neural Networks in Python
- Data Science: Natural Language Processing (NLP) in Python
- Machine Learning A-Z™: Hands-On Python & R In Data Science
- Complete Python Bootcamp: Go from zero to hero in Python

COMPUTER SKILLS

Programming/Scripting

- Python
 - Tensorflow
 - nltk
 - Sklearn
 - Numpy
 - SciPy
 - Pandas
 - matplotlib
- SQLite
- SPARQL
- C/C++
 - OpenMP
- JavaScript
- HTML5/CSS3
- L^AT_EX
- MFC
- MySQL

IDEs/Tools

- PyCharm
- Sublime Text
- Spyder
- Qt Creator
- PyQt
- IntelliJ
- MS. Visual Studio
- Matlab
- Freesurfer

TEACHING EXPERIENCES

- Teaching Assistant
 - CMPUT 101 - Introduction to Computing Winter 2017, Fall 2017 & Winter 2018
 - Lab instructor
 - Instructor: Dr. Janelle Harms (University of Alberta)
 - Advanced Programming Winter 2016
 - Instructor: Dr. Jahanshahi (Amirkabir University)
 - C++ Programming Fall 2015
 - Instructor: Dr. Amir Jahanshahi (Amirkabir University)
 - Electrical Machines I Winter 2014
 - Instructor: Dr. Javad Moghani (Amirkabir University)
 - Engineering Mathematics Fall 2013
 - Instructor: Dr. Yaser Norouzi (Amirkabir University)

📌 References, Further information, and Proofs are available upon Request