MOHAMMADREZA ARDESTANI

Curriculum vitae last updated on July 22, 2022

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EDUCATION

Master of Science in Computer Science   *2022-2024 (Expected)*
🛡 University of Lethbridge

Bachelor of Science in Computer Science   *2016-2022*
⚙Amirkabir University of Technology
Selected Courses [1] Transcripts[2]

Diploma in Mathematics and Physics   *2012-2016*
❇ National Organization for Development of Exceptional Talents

RESEARCH INTERESTS

- **Natural Language Processing**   • **Conversational AI**   • **Data Mining**

RESEARCH EXPERIENCE

Dialogue Systems   Oct 2021 - May 2022
Undergraduate project

· "Multi-Domain Multi-Modal Task-Oriented Dialogue System" under the supervision of Dr. Akbari

SELECTED PROJECTS

Advanced Natural Language Processing   2022
Independent Course at MCI Company

· Implemented several project on Static and Dynamic Embedding, Information Retrieval, and Chat-bot and eventually became top student and received back my course tuition as an award

RadarCx website   2021
Software Design course project

· A portal for non-programmer cryptocurrency traders to design strategy and receive notification
· The website was developed by adopting Scrum Methodology (Agile Software Development), CI-CD (Continuous Delivery and Continuous Integration), and push-notification technology

Several projects in AI   2021
Artificial Intelligence course

· Heuristic search (The 8-puzzle problem) with comparing different hyper-parameters and metrics
· Genetic algorithm for 0/1 knapsack problem; comparing it with Dynamic programming and brute-force

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[1] *Artificial Intelligence :A^+ ; Data Mining :A^+ ; Social Media Computing :A^+ ; Data Structures and Algorithms :A^+ ; Logic and Set Theory :A^+ ; Software Design:A^+ ; Theory of Computation:A^+; Computer Geometrical Design:A*

[2] Transcripts are publicly available on my GitHub

- Adversarial search (implemented for tic-tac-toe)
- Constraint satisfaction (implemented for graph coloring)
- Fuzzy logic (implementation of a fuzzy controller in python language)
- Other covered topics: Swarm intelligence, Knowledge-based system, Evolutionary algorithms, ...

Time series analysis with statistical methods and Neural Networks 2021
Data Mining course

- Use of the statistical methods(AR, ARIMA, SARIMAX) from *statsmodels* lib and LSTM method from *TensorFlow*

Topic detection and sentiment analysis 2020
Social Media Computing course final project

- The Amazon movie dataset was used to extract topics using LDA method
- The sentiment was detected both unsupervised and supervised.
  - **Other projects of this course:**
    - Micro-blogs text classification
    - Spam detection in Persian language
    - web crawling

Sweep line algorithm applications 2020
Computer Geometrical Design

- implementation of star-shaped polygons with an arbitrary starting point in $O(n * log(n))$
- implementation of trapezoidal-triangulation

A python code for demonstrating Printing Problem is undecidable 2020
Theory of Computation(TOC) course

- Designing (at least) a pseudo-code to demonstrate that Printing Probelm is undecidable was one of the bonus projects of TOC course

Linear optimization 2020
Linear Optimization course

- During the semester, 12 problem sets were submitted, each of which was implemented by the Lingo
- This semester, Combinatorial Optimization course is taken for advanced optimization problems

HONORS AND AWARDS

Scored 316 in GRE Oct 2021
- Ranked 79th percentile in Quantitative Reasoning among graduate students taking the GRE worldwide

Accepted in Amirkabir University of Technology(AUT) 2016
- Having been ranked top 1% in national university entrance exam, got accepted in the second best university of Iran, which is ranked 465th in the world

Accepted in NODET (National Organization for Development of Exceptional Talents) High School Entrance Exam Jul 2012
- NODET student selection exam is held annually nationwide for students entering secondary school. The organization is responsible for a number of schools across the country, which train students to a more advanced level in each field of study

VOLUNTARY WORKS

Network administrator   2018

· Managing AUT dormitory computer commonplace

Office of students' dormitory affairs   Sep-Nov 2017

· Prioritizing allocation of different properties of AUT dormitories to students based on various factors, which was demanding in high level of communication skills, under the supervision of Dr. Saeid Bahrami

INTERESTS AND HOBBIES

Running, Violin

· Provincial record holder in the 100-meter race competition in 2011
· Pre-intermediate level of violin competence

Books on Philosophy and Cognitive Science

· Studied several books and articles concerning philosophy of mathematics, science, and technology and cognitive science and epistemology, partly under the supervision of Dr. Milad Nouri

SKILLS

Programming Languages	C/C++, Jave, Python, R
Web Technologies	HTML, CSS
Web, Mobile App Frameworks	Django, Kivy
Libraries	numPy, Pandas, sklearn
Operating Systems	Linux, Windows
Languages	Persian, Arabic, English (AC IELTS S:7.5 L:6.5 W:6 R:6.5)
Miscellaneous	LaTeX, Jupyter, Lingo, GAMS, Azure, Heroku, Git

REFERENCES

- **Mahdi Ghatee**   ghatee@ { aut.ac.ir, gmail.com }
  Associate Professor at AUT / Associate Dean for Graduate Studies, Research and International Affairs / Head of norc.aut.ac.ir / Academic Editor of the Journal of Mathematics
  Relation: My advisor professor for 4 years / Got 19.75/20 in Artificial intelligence taught by him

- **Nazanin Roshandel Tavana**   nrtavana@aut.ac.ir
  Assistant Professor at Amirkabir University of Technology / Former researcher at IPM
  Relation: Top Student in Computation Theory and Logic and Set Theory courses she taught

- **Farnaz Hooshmand Khaligh**   f.hooshmand.khaligh@aut.ac.ir
  Assistant Professor of Operations Research at AUT
  Relation: Second best student in Linear Programming course among more than 120 students

- **Mohammad Akbari**   akbari.ma@aut.ac.ir
  Assistant Professor at Amirkabir University of Technology / Head of dslab.aut.ac.ir
  Relation: My undergraduate project supervisor / Best and second-best student in "Social Media Computing" and "Data Structure" Courses respectively

- **Saeid Bahrami**   saeid.bahrami@etu.sorbonne-universite.fr
  Ph.D at Sorbonne / Member of Iran's National Elites Foundation / President of students' residence
  Relation: Manager of my mentioned voluntary works
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