# Amir Reza Mohammadi

## Personal Information

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|---|---|
| Age | 25 |
| Website | iasbs.ac.ir/mohammadi.a |
| Language | Persian (native), English (fluent), Turkish (basic), Arabic (basic) |

## Education

2019 - 2021 **M.Sc. in Computer Science**, *Institute for Advanced Studies in Basic Sciences (IASBS)*, Zanjan,Iran.

**Selected courses passed:** Advanced Artificial Intelligence (A++), Reinforcement Learning (A++), Big Data Analytics (A+), Advanced Database Management (A+), Data Mining (A++), NLP and Information Retrieval (A+), Computational data Mining (A+), Multi Agent Systems (A++)

GPA 4.0/4.0 | Ranked 1st

2018 **Visiting Researcher**, *Studied as an EU funded Erasmus+ project called GraDAna in partnership with Vienna University of Technology (TUVIE), University of Bonn (UoB) and 9 other partners and universities.*, Bonn, Germany.

**Participated topics:** Statistical Methods in Information Systems, Open Source Software, Data Engineering, Social Networks Analytics, Cloud Computing, Distributed Systems, Big Data in Practice, Tools and Technologies in Data Science, Upgrading Soft Skills for Computer Engineers, Conducting "Open Science": Approaches, Tools and Practices

2014 - 2018 **B.Sc. in Information Technology**, *Institute for Advanced Studies in Basic Sciences (IASBS)*, Zanjan,Iran.
**Selected courses passed:** Artificial Intelligence (A++), Machine Learning and Intelligent systems (A++), Data Structure (A++), Software Engineering (A+), Neural Networks (A+)

GPA 3.82/4.0 | Ranked 4/48

## Technical skills

Python Keras, TensorFlow, NumPy, Pandas, scikit-learn, Theano, SciPy, scikit-learn, Matplotlib, NLTK, spacy, BeautifulSoup, Cython, IPython, OpenCV

C++ STL, Qt, CUDA, OpenCV, OpenMP, FLTK, Torch, CMake

Frameworks PyTorch, Microsoft NNI, TPOT, Auto-Sklearn, Auto-Keras, Apache Spark

Other Tools and technologies Erlang, SQL, MongoDB, LaTeX, Git, Linux, Scrum, Matlab, Software-development(DBC, Agile), Web-development(HTML, CSS, NodeJS, PHP, jQuery, Web Socket)

## Teaching Assistants

⇒ **Big Data Analytics** - course page
↪ Teacher: Dr. Mahdi Bohlouli
↪ Year: 2020

⇒ **Software Engineering** - course page
↪ Teacher: Dr. Mohsen Afsharchi
↪ Year: 2017

⇒ **Algorithm Design and Data Structure**
↪ Teacher: Dr. Mansoor Davoodi Monfared
↪ Year: 2016

## Publications

⇒ **HPT4Rec: AutoML-based Hyperparameter Self-Tuning Framework for Session-based Recommender Systems**

↪ **Amir Reza Mohammadi**, Mohammad Hossein Nazeri, Mahdi Bohlouli, Submitted to 15th ACM International Conference on Web Search and Data Mining (WSDM), 2022

↪ Abstract—Recommender systems have evolved beyond the basic user-item filtering methods in research and are becoming more sophisticated. However, these filtering methods are still commonly used in realworld scenarios, mainly because they are easier to debug and reconfigure. Indeed the existing frameworks do not adequately support algorithmic tuning. Moreover, they are primarily focused on the reproducibility of state-of-the-art accuracy rather than ease of algorithm development and maintenance. Therefore, rapid and iterative experimentation and debugging are considerably hindered. In this work, we propose HPT4Rec, which is an AutoML-based framework with a modular deep session-based recommender code-base and an integrated automated hyperparameter tuning component. The proposed framework automates searching for the best session-based model for a given data in web-scale ML systems. Therefore it can help to consistently update the model based on potential changes in the type and volume of data that is prevalent for a real-world scenario. It is demonstrated that HPT4Rec provides extensible data structures, training service compatibility, and GPU-accelerated execution while maintaining training efficiency and recommendation accuracy. We have conducted our experiments on the benchmark RecSys 2015 dataset and utilized GRU4Rec as the core structure of our deep recommender. Achieved results of our experiments show the importance of continuous and iterative parameter tuning, particularly for real-world scenarios. The framework and documents are released at https://github.com/amirreza-m95/HPT4Rec.

⇒ **GMM-TF: Adaptive Generative Multi-Modal Framework for Trajectory Forecasting in Autonomous Vehicles**

↪ Mohammad Hossein Nazeri, **Amir Reza Mohammadi**, Milad Bohlouli, Mahdi Bohlouli, Submitted to 21st IEEE International Conference on Data Mining (ICDM), 2021

## Projects

⇒ **Kaseb, Funded Startup Co-Founder**

↪ Description: Implementing Kaseb, smart user analysis solution for intention prediction of web users.

↪ Location: Arvancloud Company, Tehran, Iran

↪ Date: summer 2019

⇒ **2nd place in FinTech Competition**

↪ Description: Implementing "BidWin", an online auction website.

↪ Location: Science and Technology Park, Zanjan, Iran

↪ Date: Winter 2016

⇒ **Final round team in IoT Cup**

↪ Description: smart doorbell which could open the door with mobile application. Also with face recognition implemented, it can open it to defined characters.

↪ Location: Iran University of Science and Technology, Tehran, Iran

↪ Date: Summer 2015

⇒ **TeleMed**

↪ Description: Web application for Online video chat between patients and specialist.

↪ Supervisor: Dr. Peyman Pahlevani

⇒ **Eventagram**

↪ Description: Android application for event sharing

↪ Supervisor: Dr. Ali Ebnenasir

## Research Assistants

⇒ **Intelligent Systems Group**
↪ Leading researcher: Dr. Mahdi Bohlouli
↪ Year: 2018-Present

⇒ **Internet of things Lab.**
↪ Leading researcher: Dr. Peyman Pahlevani
↪ Year: 2016-2017

⇒ **Cloud computing Lab.**
↪ Junior Researcher: Dr. Mohamad Ali Farajian
↪ Year: 2015

## Research Interests

- Machine Learning
- Neural Architecture Search
- AutoML
- Recommender Systems

## Other Interests

- playing Golf (professionally)
- Solving algorithmic Problems
- Camping

# References

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