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Education

Institute For Research In Fundamental Sciences - IPM

Ph.D., Computer science, 2016-2023.

Thesis: Verification of Multi-Agent Learning Systems
based on Epistemic Logic.

University of Tehran, Tehran, Iran

MSc., Computer science, 2013-2016.

Thesis: Model Checking Multi-Agent Systems.
GPA: 3.9 *Rank 2nd*

Sharif University of Technology, Tehran, Iran

BSc., Computer science, 2005-2010.

Honors

<i>Second Rank</i> , Iran CS Ph.D. Nationwide Entrance exam	2014
<i>Bronze Medal</i> , National Informatics Olympiad, Summer	2004
<i>Bronze Medal</i> , National Informatics Olympiad, Summer	2003
<i>Diploma of Honor</i> , Kharazmi National Festival of innovation,	2002
<i>First Rank</i> , In-State Electronic Olympiad	2002

Awards and Fellowships

<i>IPM - Foundation</i> , Graduate scholarship	2016 - 2021
<i>National Elite Foundation</i> , Graduate fellowship	2013 - 2015
<i>National Elite Foundation</i> , Undergraduate fellowship	2007 - 2009

Languages & Skills

Persian (native), **English** (intermediate)
Python, C++, Java, C#, PHP, and JavaScript
PostgreSQL, MySQL, SQL Server, and Oracle
TensorFlow, PyTorch, Scikit-learn, numpy, Repast, and NetLogo
OpenCV, Halcon, AtmelStudio, Unreal Engine, and Cocos2D-X

Research
Experiences

**Linear Temporal Public Announcement Logic:
a new perspective for reasoning about
the knowledge of multi-classifiers**
2023; Bulletin of the Iranian Mathematical Society

**What does COVID-19 Testing Results Really Say?
The Real Statistics Concealed Behind the Accessible Data**
2021; Journal of Medical Virology, DOI: 10.1002/jmv.27173

**Understanding Epidemic Data and Statistics:
A case study of COVID-19**
2020; Journal of Medical Virology, DOI: 10.1002/jmv.25885

**A deeper look at COVID-19 CFR:
health care impact and roots of discrepancy**
2020; ResearchSquare, DOI: 10.21203/rs.3.rs-23962/v1

An epistemic logical view of Deep Neural Networks
2019; Fundamentals of Software Engineering (FSEN) 2019

Model Checking Multi-Agent Systems
2016; MSc Thesis, Under the supervision of Dr. Alizadeh.

**Assessing new conditions for secretary problem using
Multi-Agent Systems**
2013; IEEE - 13th Iranian Conference on Fuzzy Systems (IFSC)

Data-Mining Applications in Petroleum
2010; BSc Thesis, Under the supervision of Dr. Tabesh.

Workshop
Experiences

**Linear Temporal Public Announcement Logic:
a new perspective for reasoning about
the knowledge of multi-classifiers**
2021; 8th colloquium of Iranian Association of Logic

Data-Science in Industry
2021; Kish International Campus, University of Tehran

AI in Bussiness
2019; DMOND Meetups

Teaching
Experiences

University of Tehran
Fundamentals of Programming-Python
Advanced Programming-Python

Fall 2022
Spring 2020

Review for
Journals

BMJ Open
Journal of Medical Virology
Neural Computing and Applications

Teacher Assistant Experiences	University of Tehran	
	Coding Theory, Dr. M.Noori	Fall 2014
	Sharif University of Technology	
	Basic Programming (C++), Dr. A. Aavani	Fall 2007
	Advanced Programming (Java), Dr. A. Aavani	Spring 2007
	Design of Algorithms, Dr. Y. Tabesh	Spring 2007
	Basic Java Programming, Dr. A. Aavani	Fall 2006
Work Experiences	University of Tehran Kish International Campus	2019-2021
	Teacher & Technical advisor	
	DMOND Accelerator	2019
	Technical advisor	
	Shaghayegh co.	2018 - 2019
	Strategy manager & Data scientist (Python)	
	University of Tehran	2017-2019
	Technical advisor	
	XroboX co., University of Tehran Science & Tech Park	2016 - 2018
	Senior game & back-end developer (Python and C++)	
	University of Tehran College of Science	2015
	Full-stack developer (Python, SQL, and Js)	
	MTN Irancell	2015
	Software developer (IOT)	
SIB co.	2014-2015	
Back-end developer (Python, Big Data)		
XroboX co., University of Tehran Science & Tech Park	2013-2014	
Senior C++ developer (Robotics, simulation, and modeling)		
Freelance	2011-2013	
Full-stack developer (Python, SQL, and Js)		
SafaMed	2009-2011	
Software developer (C# and SQL-Server)		
Goharhonar	2009-2011	
Web developer (Html, SQL, and Js)		
Negaresh Rayaneh Poya	2007-2009	
Software developer (Image processing, C++)		

Certifications

AI for Medicine

A 3-course specialization by deeplearning.ai on Coursera. Summer 2020
Verify at coursera.org/verify/specialization/GZCS4PVCGS4M

Advanced Data Science with IBM

A 4-course specialization by IBM on Coursera. Summer 2019
Verify at coursera.org/verify/specialization/GPLKKAHA6W4E

IBM Data Science Professional Certificate

A 9-course specialization by IBM on Coursera. Spring 2019
Verify at coursera.org/verify/specialization/B979WK32U9C3

Machine Learning with TensorFlow on

Google Cloud Platform

A 5-course specialization by Google Cloud on Coursera. Spring 2019
Verify at coursera.org/verify/specialization/UWLWHS6PWUPT

Reasoning, Data Analysis, and Writing

A 3-course specialization by Duke University on Coursera. Fall 2016
Verify at coursera.org/account/accomplishments/specialization/certificate/Z7KFNT6WSJS6

Natural Language Processing with Classification and

Vector Spaces - By deeplearning.ai on Coursera. Summer 2020
Verify at coursera.org/account/accomplishments/certificate/YFKGPQG553JQ

Natural Language Processing with Probabilistic Models

By deeplearning.ai on Coursera. Summer 2020
Verify at coursera.org/account/accomplishments/certificate/KLA8ETV4F65E

Natural Language Processing with Sequence Models

By deeplearning.ai on Coursera. Summer 2020
Verify at coursera.org/account/accomplishments/certificate/N3ZGSBL3AH5K

Introduction to Genomic Technologies

By Johns Hopkins University on Coursera. Summer 2020
Verify at coursera.org/account/accomplishments/certificate/8G9ABP6QGWDF

Genomic Data Science with Galaxy

By Johns Hopkins University on Coursera. Summer 2020
Verify at coursera.org/account/accomplishments/certificate/VDZ8W72XG2KG

Python for Genomic Data Science

By Johns Hopkins University on Coursera. Summer 2020
Verify at coursera.org/account/accomplishments/certificate/6TPXUGCU3F8L

Dissertation “**Verification of Multi-Agent Learning Systems
based on Epistemic Logic**”

We recommend interpreting information using public announcement logic (PAL), an Epistemic Logic (EL) extension. We suggest the verification of developed systems through multi-classifier modeling. In fact, we introduce MASKS (Multi-Agent System Knowledge Sharing) as a PAL model to verify properties in classifiers. MASKS bridges logical verification methods to widely applied classifiers. The language of MASKS is based on EL, which simplifies information interpretation. We present a tool to apply the MASKS verification method on arbitrary classifiers. Here, a pointwise verification is applied, in which property satisfaction is evaluated for a single input instead of the whole system. Thus, a property set is fed to classifiers as input to verify a property for the system. Using MASKS, we also suggest a uniform information framework, which investigates information gathered by a group of classifiers and information provided by other sources. When classifiers agree on an answer, the input verifies the property for the system of classifiers. Additionally, we introduce the Linear Temporal Public Announcement Logic (LTPAL) model by combining PAL with Linear Temporal Logic (LTL) to extend the model’s expressiveness to interpret the model data-stream (DS) inputs. Usually, semi-continued DSs are a sequence of SFDs in which each frame is correlated to adjacent frames. This characteristic allows us to define actions in these types of inputs. To cover semi-continued DSs, we extend PAL to LTPAL. In LTPAL, a property can be defined for consecutive inputs, which leads us to define a verification method for a DS over multiple classifiers. The language of LTPAL allows us to define actions and investigate their occurrences. It is also possible to identify classifiers that infer that some action has occurred.

Manuscripts under review **Meet MASKS: A novel Multi-Classifier’s verification approach**
Journal: Autonomous Agents and Multi-Agent Systems
Available from arXiv: 2007.10090 [cs.AI]

References **Majid Alizadeh**, Associate Professor of Computer Science, University of Tehran
Email: majidalizadeh@ut.ac.ir
Ali Movaghar, Professor of Computer Engineering, Sharif University of Technology
Email: movaghar@sharif.edu
Mohammad Ganjtabesh, Professor of Computer Science, University of Tehran
Email: mgtabesh@ut.ac.ir