

Pouya Shati

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- EDUCATION**
- University of Toronto**, Ontario, Canada Sep 2019 – Present
 - Ph.D. in Computer Science
 - Supervisors: Prof. Eldan Cohen, Prof. Sheila McIlraith
 - Sharif University of Technology**, Tehran, Iran Sep 2014 – Aug 2019
 - B.Sc. in Software Engineering
 - Minor in Mathematics
 - GPA: 18.90 / 20
 - Major GPA: 19.34 / 20
 - Iran Game Development Institute**, Tehran, Iran Jul 2014 – Aug 2015
 - Digital Game Design
 - Allameh Helli High School**, affiliated with **National Organization for Development of Exceptional Talents**, Tehran, Iran Sep 2010 – Jun 2014
 - Diploma in Physics and Mathematics discipline
- RESEARCH INTERESTS**
- Operations Research
 - Constraint Satisfaction Problems
 - Machine Learning
 - Interpretable AI
- HONORS**
- Ranked **270th** nationwide and **15th** regionwide in university entrance exam Jul 2014
 - Accepted for the **ISTernship** program at **IST Austria** to work in **Prof. Chatterjee** group Mar 2018
 - Ranked **1st** at **Research Experience for Undergraduates program**, Computer Engineering Department, Sharif University of Technology Aug 2016
 - Ranked **1st** in **Tehran First Indie Game Festival** 2-Day competition Feb 2015
- CONFERENCE PAPERS**
- SAT-Based Learning of Compact Binary Decision Diagrams for Classification**
Pouya Shati, Eldan Cohen, Sheila McIlraith. The 29th International Conference on Principles and Practice of Constraint Programming (CP 2023).
 - Optimal Decision Trees For Interpretable Clustering with Constraints**
Pouya Shati, Eldan Cohen, Sheila McIlraith. The 32nd International Joint Conference on Artificial Intelligence (IJCAI-23).
 - SAT-Based Approach for Learning Optimal Decision Trees with Non-Binary Features**
Pouya Shati, Eldan Cohen, Sheila McIlraith. The 27th International Conference on Principles and Practice of Constraint Programming (CP 2021).
- JOURNAL PAPERS**
- SAT-based Optimal Classification Trees for Non-Binary Data**
Pouya Shati, Eldan Cohen, Sheila McIlraith. Constraints, volume 28, issue 2: 166-202.
 - The Evolution of Indirect Reciprocity Under Action and Assessment Generosity**
Laura Schmid, Pouya Shati, Christian Hilbe, Krishnendu Chatterjee (2021). Scientific reports, volume 11, issue 1: 1-14.
- RESEARCH PROJECTS**
- Procedural Generation of Video Game Levels With Constraints**
P. Shati, Prof. Khalil
 - Exploitation of Dependencies Through Recourse Decomposition for Two-stage Stochastic Problems**
P. Shati, Prof. Bodur
 - Unsupervised Learning of 3D Objects Using Synthetic 2D Images of Faces**
A. AhmadiTeshnizi, Y. Ding, P. Shati
 - Probabilistic Verification of Program Fairness**
P. Shati, V. Hui
 - Extended Büchi Automaton of Records, a Formal Semantic for the Reo Coordination Language**
P. Shati, Prof. Izadi
 - An Improved Coding for Straggler Mitigation in Distributed Matrix Multiplication**
P. Shati, Prof. Zarrabi-Zadeh
Bachelor thesis
 - Using Multidimensional Chromosomes for Genetic Evolution of Cellular Automata**
P. Shati, A. Safari, Prof. Izadi
Research Experience for Undergraduates program, Sharif University of Technology

WORK EXPERIENCES	<ul style="list-style-type: none"> ▪ Part-time research-oriented internship at Fujitsu Laboratories of America, Inc. Supervisor: Dr. Hayato Ushijima-Mwesigwa 2021 ▪ English news coverage and public relations for The 5th Tehran Game Festival 2015
SELECTED COURSES	<ul style="list-style-type: none"> ▪ Machine Learning for Mathematical Optimization, A+ ▪ Stochastic Programming and Robust Optimization, A+ ▪ Neural Networks and Deep Learning, A+ ▪ Topics in Knowledge Representation and Reasoning, A+ ▪ Advanced Propositional Reasoning, A+ ▪ Topics in Verification Program Synthesis, A+ ▪ Topics in Machine Learning, AI and Ethics, A+ ▪ Computability and Logic, A+ ▪ Algorithmic Game Theory, 20/20 ▪ Theory of Computation and Computational Complexity, 20/20 ▪ Approximation Algorithms, 20/20 ▪ Economical and Social Networks, 20/20
TEACHING EXPERIENCES	<p>HEAD TEACHING ASSISTANT</p> <ul style="list-style-type: none"> ▪ Theory of Languages and Automata Fall 2017, Winter 2017 ▪ Design of Algorithms (head of theory) Fall 2017 ▪ Discrete Structures Fall 2016 <p>TEACHING ASSISTANT</p> <ul style="list-style-type: none"> ▪ Introduction to the Theory of Computation Fall 2020, Fall 2023 ▪ Algorithm Design, Analysis and Complexity S'20, S'21, F'22, W'23, W'24 ▪ Computational Complexity and Computability Winter 2020, Winter 2021, Winter 2022 ▪ Enriched Introduction to the Theory of Computation Winter 2020, Winter 2022 ▪ Software Verification and Testing Fall 2019 ▪ Programming Languages Fall 2018 ▪ Algorithmic Game Theory Fall 2018 ▪ Artificial Intelligence Winter 2018 ▪ Compiler Design Winter 2017 ▪ Discrete Structures Winter 2017, Winter 2016 ▪ Advanced Programming in Java Winter 2016 <p>MENTORSHIP</p> <ul style="list-style-type: none"> ▪ Served as a mentor in Iran Game Development Incubator Summer 2015 ▪ Taught game design and gameplay programming in Allameh Helli High School Summer 2014 ▪ Physics teacher, Arg Academy 2015 – 2016 <p>PROJECTS</p> <ul style="list-style-type: none"> ▪ Recorded Game Maker tutorial video series for Iran Game Development Institute
GAME PROJECTS	<ul style="list-style-type: none"> ▪ Game designer and graphics programmer for Sharif AI Challenge 2016 Feb 2016 ▪ Lead game designer for Sharif AI Challenge 2017 Feb 2017 ▪ Member of the committee and lead game designer for Sharif AI Challenge 2018 Feb 2018 ▪ Rasan game, developed for the visually impaired in Khwarizmi Student Competition Sep 2012 ▪ Don't Fall, Ninja Samurai and Sorceress Wars developed for Game Jam competitions ▪ Children of Time, designed for Advanced Programming in Java Spring 2016 ▪ Dream Lost, narrative-driven game developed for Level Up Aug 2016
MEMBERSHIPS	<ul style="list-style-type: none"> ▪ Textual Reo team, The Institute for Research in Fundamental Sciences (IPM) 2017 ▪ IEEE, Sharif University of Technology student branch 2016 ▪ Infinite Monkey, game development team 2016
LANGUAGES	<ul style="list-style-type: none"> ▪ Persian: Native, English: Fluent
TOOLS	<ul style="list-style-type: none"> ▪ PyTorch, Java, Various SAT and MaxSAT solvers, Gurobi, MiniZinc, Google OR-Tools, Unity, L^AT_EX