

Taha Rostami

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Summary of Qualifications

- More than two years of academic research experience in Computer Engineering, specializing in Software Engineering
- Strong programming skills in C#, Python, SQL Server, XGboost, LightGBM, PyTorch, Tensorflow, and more
- Proven ability to learn quickly and work hard and consistently, in addition to sincere honesty, commitment, and work ethic
- Successful experiences in conveying technical ideas to technical and non-technical audiences through written and verbal communication

Computer Skills

- **Highly skilled in Microsoft technologies**, with 6+ years of expertise in C#, SQL Server, ASP.NET Core, ML.NET, SignalR, and more
- **Highly experienced in data science tools**, with 3+ years of experience in Python, PyTorch, TensorFlow, LightGBM, Optuna, and more
- **Familiar with Z3, LLVM, Hugging Face, NLTK, PyG, Stable Baselines, PyGad, JavaScript, Java, C, MySQL, Docker, Git, and more**

Education

M.Sc., Software Engineering, Tarbiat Modares University (TMU), Iran, GPA: 3.88/4.0 **2019 - 2022**

B.Sc., Software Engineering, Babol Noshirvani University of Technology (BNUT), Iran, GPA: 3.55/4.0 **2014 –2019**

Work Experience

Research Assistant, TMU **Sep 2020 - Oct 2022**

- Developed two novel methods for predicting fault-revealing mutants in mutation testing that significantly outperform state-of-the-art
- Gathering a dataset & proposed a transfer learning-based solution using a pre-trained model UniXcoder for learning mutant representation
- Investigated predictive mutation testing and proposed a method to handle missing values
- Formulated two new problems in mutation testing named Dynamic Mutant Prioritization (DMP) and Dynamic Mutant Selection (DMS)
- Proposed concrete frameworks for future work to investigate DMP and DMS

Mentor, Faradars [\[link\]](#) **Jan 2021 – Mar 2021**

- Designed a syllabus and taught Consuming Web Services in C#

Intern, RADMAN **Jul 2019 – Sep 2019**

- Customized RADMAN's website template using Html5, CSS3, and Java Script
- Designed and Implemented a SQL server database for their website
- Implemented the website's backend by C#, and ASP.NET Core

Teaching Assistant, BNUT **Feb 2017 – Jun 2017**

- Designed a project for an Advanced Programming course and divided it into simple tasks for students
- Instructed C# in practice by solving multiple problems

Intern, Behineh System **Jul 2015 – Sep 2015**

- Designed and implemented management software for their customer

- Designed and implemented a SQL Server database for that software
- Designed and implemented a custom Persian calendar for that software

Chess player, Asasaraye Same

Oct 2011 – Oct 2013

- Worked as a chess player for two sessions with great performance

Volunteer Activities

- Applied technical skills and expertise to a handful of interdisciplinary projects outside of my background, such as [\[link\]](#) and [\[link\]](#)
- Successfully monitored and contributed to scientific integrity either by finding bugs or recognizing misconduct in a few papers
- Mentored a handful of computer science, chess, and language learner students and graduates, providing guidance on study strategies, career development, and problem-solving techniques to overcome related challenges and achieve measurable improvements
- Provided detailed answers to Farsi language learners' questions in English on HiNative, gaining a deeper understanding of the language and valuable insights into the challenges faced by learners [\[link\]](#)

Selected Academic Projects

DeepRL_EmotionRecognition_UsingEEGsignals [\[link\]](#)

2021

- Proposed, implemented, and evaluated a deep reinforcement learning-based method for emotion recognition using EEG signals in collaboration with another member

Harif- a graph-based automatic course-selection system that recommends schedules based on students' preferences [\[link\]](#)

2018

- Analyzed the curriculum published by the Ministry of Science and BNUT
- Formulated the core problem as MAX-SAT with a set of hard and soft constraints
- Designed and implemented a randomized algorithm for solving the problem that satisfies all hard constraints and maximizes a given objective function calculated based on soft constraints
- Designed and implemented efficient software using C# that provides all the above facilities with a modern and user-friendly interface

NitPhoneBook- A phone book for BNUT [\[link\]](#)

2018

- Specified the system's requirements by conducting a series of interviews with BNUT's administrators
- Analyzed the specified requirements and designed an architecture for the software
- Designed and implemented a recursive algorithm that satisfies one of the primary requirements of the system
- Designed and implemented a SQL server database of the system in collaboration with other members
- Designed and implemented a desktop application with a modern and user-friendly interface

Awards

Academic

2014-present

- Outstanding student, ranked 1st at Computer Engineering Dept., TMU, Tehran, Iran, 2021
- Highly Competitive Scholarship for MSc in Software Engineering study at TMU, 2019
- Highly Competitive Scholarship for BSc in Software Engineering study at BNUT, 2014

Others

beginning-2013

- Iran Chess Premier League, 1st with Asa Saraye Sameh Team, 2013

- Ranked 3rd place in Asian Youth Blitz chess championships, with Iranian National Team, Southern, Sri Lanka, 2012
- Iran Chess League One, 3rd with Asa Saraye Sameh Team, 2011
- Ranked 1st place in Calligraphy Competition, Mazandaran, Iran, 2007

Publications

Scientific Journal/Working Papers

- **T. Rostami**, S. Jalili, "Predicting useful mutants by fine-tuning the UniXcoder pre-trained model," in prep., 2023 [\[link\]](#)
- **T. Rostami**, S. Jalili, "Predicting fault-revealing mutants based on mutant killing severity," submitted to Information and Software Technology, Under Review, 2023 [\[link\]](#)
- **T. Rostami**, "An interpretable model for predicting non-trivial equivalent mutants of the MART," submitted to The Journal of Systems & Software, Under Review, 2023 [\[link\]](#)

Scientific Conference Papers

- **T. Rostami**, S. Jalili, "A heuristic function for improving the prediction accuracy of fault revealing mutants," in 9th Iranian Joint Congress on Fuzzy and Intelligent Systems, 2022 [\[link\]](#)
- **T. Rostami**, S. Jalili, "A method for improving predictive mutation testing that considers the impacts of missing data," in 12th International Conference on Information and Knowledge Technology, 2021 [\[link\]](#)

Non-Scientific

- **T. Rostami**, "Navigating the Challenges of Studying Computer Science: A Guide for Students at Babol Noshirvani University of Technology," 2023 [\[link\]](#)

Languages

- Persian - Native
- English – TOEFL iBT: Total 93, Reading 28, Listening 21, Speaking 22, Writing 22, April 01, 2023

Potential Future Research Directions (without order)

- **Text Analysis**- anything that is represented textual, e.g., source code of a program, natural language text, clinical text, etc.
- **Machine Learning Algorithms**- classical and symbolic ones, reinforcement learning, and deep learning; moreover, enjoy thinking in-depth about ensemble learning methods
- **Computational Logic and Reasoning**- both classical and probabilistic one
- **Constraint Satisfaction Problems**- especially from the practical perspective, i.e., by formulating and solving real-world problems such as the ones raised in software verification and using tools such as Z3
- **Complexity Theory & Designing Algorithms**- it is an old but lifelong appetite to someday work in depth on it