**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]](https://faradars.org/courses/fvcs9907-web-services-using-c-sharp) **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

**Selected Academic Projects**

**DeepRL\_EmotionRecognition\_UsingEEGsignals** [[link]](https://github.com/SaraRostami/DeepRL_EmotionRecognition_UsingEEGsignals) **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]](https://github.com/TahaRostami/Harif) **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]](https://github.com/TahaRostami/NitPhonebook) **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]](https://taharostami.github.io/publications/2023-01-02-jp2.html)
* **T. Rostami**, S. Jalili, "Predicting fault-revealing mutants based on mutant killing severity," submitted to Information and Software Technology, Under Review, 2023 [[link]](https://taharostami.github.io/publications/2023-01-01-jp1.html)
* **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]](https://taharostami.github.io/publications/2023-01-03-jp3.html)

**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]](https://taharostami.github.io/publications/2022-03-04-cfis1.html)
* **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]](https://taharostami.github.io/publications/2021-12-14-ikt1.html)

**Non-Scientific**

* **T. Rostami**, "Navigating the Challenges of Studying Computer Science: A Guide for Students at Babol Noshirvani University of Technology," 2023 [[link]](https://taharostami.github.io/publications/2023-01-04-NITCSGuide.html)

**Languages**

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

**Future research (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