Bahareh Bafandeh Mayvan

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Experiences

Sep 2014 – Jan 2019
Mashhad - Iran

Graduate Research Assistant

Software Quality Lab (SQLab)

Research fields:

- Software Quality Engineering (Flexibility, Reusability, and Maintenance)
- Software Design Patterns Mining
- Code Smell Mining
- Software Refactoring

Projects:

- Designed and implemented a tool for the automatic generation of source code with predefined number of design pattern instances
- Designed and implemented a comprehensive, fair, and objective benchmark to evaluate pattern mining methods (based on automatic generation of testbeds)
- Designed and implemented a method for the efficient and precise detection of software design patterns from source code (based on graph theory and method signatures)
- Designed and implemented a method for the precise detection of bad smells/anti-patterns from source code (based on quality metrics and software refactoring opportunities)

Publications:

- Bafandeh Mayvan, Bahareh, Abbas Rasoolzadegan, and Amir Mohammad Ebrahimi. "**A New Benchmark for Evaluating Pattern Mining Methods Based on the Automatic Generation of Testbeds.**" Information and Software Technology 109 (2019) 60-79.
- Bafandeh Mayvan, Bahareh, and Abbas Rasoolzadegan. "**Design pattern detection based on the graph theory**." Knowledge-Based Systems 120 (2017): 211-225.
- Bafandeh Mayvan, Bahareh, Abbas Rasoolzadegan, and Zahra Ghavidel Yazdi. "**The state of the art on design patterns: A systematic mapping of the literature**." Journal of Systems and Software 125 (2017): 93-118.
- Bafandeh Mayvan, Bahareh, and Abbas Rasoolzadegan. "**The Quantitative Measurement of Software Components Reusability: Methods, Applications, Challenges.**" Journal of Modeling in Engineering 14, no. 46 (2016): 101-126.
- Bafandeh Mayvan, Bahareh, Abbas Rasoolzadegan, and Abbas Javan Jafari. "**Bad Smell Mining Using Quality Metrics and Refactoring Opportunities**." ACM Transactions on Software Engineering and Methodology - Under Review (2019).

Sep 2014 – Mar 2017
Mashhad - Iran

Graduate Research Assistant

Machine Vision Lab (MVLab)

Research fields:

- Computer Vision & Image Processing
- Medical Image Analysis

Projects:

- Implemented a method to detect retinal micro-aneurysms using multi-scale correlation coefficients
- Implemented a method for the automatic segmentation of seven retinal layers in SDOCT images
- Implemented a method for the automatic detection of diabetic retinopathy exudates from non-dilated retinal images using mathematical morphology methods
- Implemented a method to compute the adaptive threshold of surfaces for image binarization
- Implemented a method to obtain the path and velocity of water bubbles in an experimental environment
- Implemented a method to retrieve images based on content using dominant color and texture features
- Implemented an Optical Character Recognition method to identify Persian-typed digits

Sep 2012 – Dec 2014
Mashhad - Iran

Graduate Research Assistant

Algorithms and Computation Lab – University of Tehran

Research fields:

- Theoretical Computer Science
- Computational Engineering Science
- Network Vulnerability Parameters

Projects:

- Designed and implemented a method to increase the lifetime of Wireless Sensor Networks through alleviating the Energy Hole problem

Publications:

- Bafandeh Mayvan, Bahareh, Dara Moazzami, and Amin Ghodousian. "**On the first-order edge tenacity of a graph**." Discrete Applied Mathematics 205 (2016): 8-15.
- Moazzami, Dara, and Bahareh Bafandeh Mayvan. "**The cth order Edge-Tenacity of a Graph**." American Mathematical Society-AMS (2012).

Sep 2012 – Nov 2018
Mashhad - Iran

Lecturer/Instructor

- Advanced Computer (M.Sc. Level), Ferdowsi University of Mashhad
- Software Engineering, Islamic Azad University of Mashhad
- Web Programming, Islamic Azad University of Mashhad
- Advanced Programming, Islamic Azad University of Mashhad
- Programming with C/C++, University of Applied Science and Technology-Tehran
- System Analysis & Design, Ferdowsi University of Mashhad
- Software Engineering Lab

Sep 2012 – Nov 2018
Mashhad - Iran

Teaching Assistant

- Patterns in Software Engineering (M.Sc. Level), Ferdowsi University of Mashhad
- Modeling & Evaluation of Computer Systems (M.Sc. Level), Ferdowsi University of Mashhad
- Object Oriented Design (M.Sc. Level), Ferdowsi University of Mashhad
- Computer Architecture, Ferdowsi University of Mashhad

Honors & Awards

Feb 2018 & Sep 2017
Iran

Iran's National Elites Foundation Award 2017 & 2018

- Recipient of grant and academic award for graduate studies

Feb 2018 & Sep 2017
Mashhad - Iran

Exceptional Talent Award (SHAHAB) 2017 & 2018

Ferdowsi University of Mashhad

Jan 2015
Tehran - Iran

Top Graduate Award 2015

University of Tehran

Sep 2014
Tehran - Iran

Honored Graduate Award 2014

University of Tehran

- Ranked #1 among all students at the Faculty of Engineering Science, University of Tehran, Iran

Sep 2013
Tehran - Iran

Algorithms and Computation Prize 2013

University of Tehran

Sep 2014
Tehran - Iran

Exceptional Talent Award (SHAHAB) 2014

Ferdowsi University of Mashhad

Jan 2008
Mashhad - Iran

Honored Student Award 2008

Ferdowsi University of Mashhad

Technical Skills

Programming & Modeling

- C/C++, Java
- MATLAB
- PHP, HTML5, CSS3
- MySQL
- UML modeling with Visual Paradigm, Rational Rose

Education

Sep 2014 – Nov 2018
Mashhad - Iran

Ph.D. Software Engineering

Ferdowsi University of Mashhad (FUM)

- **Thesis:** A New Method for Mining Design Patterns and Code Smells from the Source Code

Sep 2012 – Dec 2014
Tehran - Iran

M.Sc. Algorithms & Computation

University of Tehran (UT)

- **Thesis:** Increasing the Lifetime of Wireless Sensor Networks by Alleviating the Energy Hole Problem

Sep 2006 - Dec 2010
Mashhad - Iran

B.Sc. Software Engineering

Ferdowsi University of Mashhad (FUM)

- **Thesis:** Implementing a Source Code Processor for Measuring C# Component Attributes