Hamid Bostani

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RESEARCH INTERESTS

- **Adversarial Machine Learning**
- **Malware Detection**
- **Machine Learning** (online learning, deep learning, incremental learning, graph neural networks)
- **Data Summarization**
- **Intrusion Detection Systems** (anomaly detection, misuse detection)
- **Internet of Things** (security, data mining)
- **Dimension Reduction** (feature selection)
- **Evolutionary Computation**
- **Recommender Systems** (collaborative filtering)

EDUCATION

Radboud University, Nijmegen, The Netherlands. October 2020-Present
Ph.D. Candidate in the Digital Security group, Institute for Computing and Information Sciences.
Dissertation: **Security and Privacy of Smart Mobile Devices** (Supervisors: Prof. Veelasha Moonsamy and Prof. Erik Poll)

Islamic Azad University (IAU), South Tehran Branch, Tehran, Iran. 2012-2015
M. Sc. in Computer Engineering (Software Engineering), GPA: 17.55/20.
Thesis: **Intrusion Detection and Identification of Attacks on the Internet of Things (IoT) Using a Combination of Machine Learning Methods** (Supervisor: Prof. Mansour Sheikhan)
Master Seminar: **Using Collaborative Filtering in Recommender Systems** (Advisor: Prof. Ali Moeini)

Islamic Azad University (IAU), Shiraz Branch, Shiraz, Iran. 2004-2008
B. Sc. in Computer Engineering (Software Engineering), GPA: 16.73/20, Major GPA: 18.53/20.
Project: "**E-Commerce System**s **(a Case Study on a Cell Phone Store)**" (Supervisor: Dr. Mostafa Fakhrahmad)

HONORS AND AWARDS

- **Fully-Funded Fellowship** (Radboud University, Oct. 2020).
- **Best Employee Award** (NOET, Nov. 2019).
- **Certificate of Appreciation (**NOET, Feb. 2018).
- **Research Funding** (Iran National Science Foundation, Feb. 2018).
- **Outstanding Researcher Award** (IAU, South Tehran Branch, Dec. 2017).
- **Best Thesis Award** (the 5th Research, Scientific & Technological National Festival of IAU, May 2017).
- **Certificate of Appreciation** (IAU, South Tehran Branch, May 2017).
- **Outstanding Paper Award** (ICSPIS'2016).
- **Selected Paper** (IST'2016).

PUBLICATIONS

Bibliographic indicators (Google Scholar October 2020) Citations: 308, h-index: 5, i10-index: 5.

Journals:

1. **H. Bostani**, M. Sheikhan, B. Mahboobi, "A Strong Coreset Algorithm to Accelerate OPF as a Graph-based Machine Learning in Large-Scale Problems," *Information Sciences*, vol. 555 (2021), pp. 424-441. DOI: 10.1016/j.ins.2020.10.009, Impact Factor (2020) = 5.91 (Q1)

2. **H. Bostani**, M. Sheikhan, "Hybrid of Anomaly-Based and Specification-Based IDS for Internet of Things Using Unsupervised OPF based on Map-Reduce Approach," *Computer Communications*, Elsevier, vol. 98 (2017), pp. 52-71. DOI: 10.1016/j.comcom.2016.12.001, Impact Factor (2016) = 3.338 (Q1)

3. **H. Bostani**, M. Sheikhan, "Modifying Supervised Optimum-Path Forest in Intrusion Detection Systems Using Social Network Approaches and Unsupervised Learning," *Pattern Recognition*, Elsevier, vol. 62 (2017), pp. 56-72.DOI: 10.1016/j.patcog.2016.08.027, Impact Factor (2016) = 4.582 (Q1)

4. **H. Bostani**, M. Sheikhan, "Hybrid of Binary Gravitational Search Algorithm and Mutual Information for Feature Selection in Intrusion Detection Systems," *Soft Computing*, Springer, vol. 21 (2017), no. 9, pp. 2307-2324.DOI: 10.1007/s00500-015-1942-8, Impact Factor (2016) = 2.472 (Q2)

5. M. Sheikhan, **H. Bostani**, "A Security Mechanism for Detecting Intrusions in Internet of Things Using Selected Features Based on MI-BGSA," *International Journal of Information & Communication Technology Research*, Iran Telecommunication Research Center (ITRC), vol. 9 (2017), no. 2, pp. 53-62. http://journal.itrc.ac.ir/article-1-42-en.html

Book Chapter:

6. M. Sheikhan, **H. Bostani**, "Binary Gravitational Search Algorithm (BGSA): Improved Efficiency," *in Encyclopedia of Information Assurance,* Taylor & Francis, 2016. https://www.taylorfrancis.com/books/9781351235808

Conferences:

7. **H. Bostani**, M. Sheikhan, B. Mahboobi, "Developing a Fast Supervised Optimum-path Forest Based on Coreset," In Proc. *19th International Symposium on Artificial Intelligence and Signal Processing* (**AISP'2017**), pp. 172-177, 2017. DOI: 10.1109/AISP.2017.8324076

8. **H. Bostani**, M. Sheikhan, "Modification of Optimum-Path Forest using Markov Cluster Process Algorithm," In Proc. *2nd International Conference on Signal Processing and Intelligent Systems (***ICSPIS'2016***)*, pp. 1-5, 2016. (***Winner of the Outstanding Paper Award***) DOI: 10.1109/ICSPIS.2016.7869874

9. M. Sheikhan, **H. Bostani**, "A Hybrid Intrusion Detection Architecture for Internet of Things," In Proc. *8th International Symposium on Telecommunication (***IST'2016***)*, pp. 601-606, 2016. (***Selected as one of the Best Papers***) DOI: 10.1109/ISTEL.2016.7881893

ORAL PRESENTATIONS	▪ "Developing a Fast Supervised Optimum-path Forest Based on Coreset," **AISP'2017, Shiraz University, Shiraz, Iran, 25-27 Oct. 2017**. ▪ "Modification of Optimum-Path Forest using Markov Cluster Process Algorithm," **ICSPIS'2016, Amirkabir University of Technology, Tehran, Iran, 14-15 Dec. 2016**. ▪ "A Hybrid Intrusion Detection Architecture for Internet of Things," **IST'2016, Iranian Research Institute for Information Science and Technology, Tehran, Iran, 27-28 Sept. 2016**.

OUTSTANDING RESEARCH AND PROJECTS	▪ **Project Manager** in Developing an Integrated Cloud Infrastructure for NOET to Deliver Online Services Associated with NOET's Mission.	January 2020–Present
	▪ **Senior Researcher** in Developing a New Generation of Optimum-path Forest (OPF) as a Graph-based Machine Learning in Order to Achieve an Efficient Pattern Recognition Tool for Using on Massive Data sets.	March 2017–Nov. 2019
	▪ **Senior Developer** in Developing a Knowledge-based System based on the Current Legacy Information Systems of the Iranian University Entrance Exams in order to Facilitate Decision-Making	May 2013–Nov 2018
	▪ **Senior Developer** in Developing an Event-based WSN Simulator Based on RPL (the routing protocol for 6LoWPAN).	April– June 2015
	▪ **Senior Developer** in Developing an Offline GIS to Facilitate Urban Commuting.	April– June 2014
	▪ **Senior Researcher** in Standardizing Software Testing at NOET.	May- August 2013

▪ **Senior Researcher** in Presenting a Collaborative Filtering Recommender System to Offering the Favorite Major Fields to Students.   Dec. 2012–February 2013

RESEARCH AND WORK EXPERIENCES

▪ **Research Assistant**   August 2017–present
Young Researchers and Elite Club of IAU, South Tehran Branch.

▪ **Research Assistant**   August 2016–March 2017
Research Center of Modeling and Optimization in Science and Engineering, IAU, South Tehran Branch.

▪ **Full-Stack Developer**   September 2012–present
Strategic Analysis and Information Security Group, Department of New Communications, NOET, Tehran, Iran.

▪ **Software Expert**   April–August 2012
Software Systems Group, Department of Information and Communication Technology, Bank Hekmat Iranian, Tehran, Iran.

SKILLS

Professional National Certifications:

▪ **SQL Server Query Tuning and Optimization**, Faratar As Danesh Institute, Tehran, Iran (2018).
▪ **SQL Server 2016 – Design & Implementation**, Faratar As Danesh Institute, Tehran, Iran (2018).
▪ **Professional SCRUM Master**, Faratar As Danesh Institute, Tehran, Iran (2016).
▪ **MCSD Web Pack 2012**, Kahkeshane Noor Institute, Tehran, Iran (2016).
▪ **ETL (SSIS) and Data Mining (SSAS) 2012**, Faratar As Danesh Institute, Tehran, Iran (2014).
▪ **Data Warehousing & OLAP using SSAS 2012**, Faratar As Danesh Institute, Tehran, Iran (2014).
▪ **Win Application (C# & intro ADO.NET)**, South Industrial Management Institute, Shiraz, Iran (2008).

Computer Knowledge:

▪ **Programming and Scripting:** C/C++, C#, SQL, Java, JavaScript, HTLM & CSS, MATLAB, Python.
▪ **Tools and IDEs:** MATLAB Optimization, Fuzzy, and Neural Net Tools, Microsoft Visual Studio, SQL Server Management Studio, Visual Paradigm, Microsoft Office, Azure Boards.
▪ **Software Development Technologies:** C#.Net Windows Form, ASP.Net Web Form, APS.Net MVC, WCF Service, jQuery & AngularJS, ADO.NET Entity Framework, Java 2 Platform Micro Edition (J2ME), Microsoft BI Technologies (Data Quality, Integrated, Analysis, and Reporting Services).
▪ **Databases and Dataflow Systems:** SQL Server (programming), Hadoop.
▪ **Software Development Methodologies:** RUP, EUP, SCRUM.
▪ **OS:** Windows

Language Skills:
▪ **Persian (Farsi):** Native language
▪ **English:** Fluent, TOEFL (Dec 2019) Internet-Based Test: 84/120 (Reading: 21/30, Listening: 22/30, Speaking: 21/30, Writing: 20/30)

REFERENCES

Dr. Veelasha Moonsamy, Assistant Professor in the Digital Security group, Institute for Computing and Information Sciences, Faculty of Science, Radboud University, Nijmegen, The Netherlands.
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Dr. Erik Poll, Associate Professor in the Digital Security group, Institute for Computing and Information Sciences, Faculty of Science, Radboud University, Nijmegen, The Netherlands.
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