



## Mohammadhadi Alaeiyan, Ph. D.

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**Data of Birth:** 17 may 1990

**Resident City:** Tehran

[Google Scholar](#), [Publons](#), [Scopus](#), [DBLP](#), [LinkedIn](#), [ResearchGate](#).

## Objective

To apply my training in computer science and present algorithms and tools, analyze data, publish scientific manuscripts and improve the quality of the software development process.

## Education and Academic Appointments

<b>Sabbatical leave (Visiting student)</b>	University of Padua
Start: June 2017. Finish: April 2018.	
<b>Ph. D. In Computer Engineering (Software)</b>	Iran University of Science and Technology (IUST)
<i>Thesis Title:</i> On the Identification and Detection of Hidden Malware Behaviors	
Start: September 2014. Finish: February 2020.	
<b>Member of Iran National Elites Foundation</b>	
GPA is <b>18.07</b> from 20 ( <b>3.7</b> from 4).	
<b>M. Sc. In Computer Engineering (Software)</b>	Iran University of Science and Technology (IUST)
<i>Thesis Title:</i> Code Obfuscation by abstract interpretation	
Start: September 2012. Finish: September 2014.	
<i>Ranked 1<sup>st</sup></i> among graduated students in the faculty of Computer Engineering, Iran university of Science and Technology. GPA is <b>18.18</b> form 20 ( <b>3.7</b> from 4).	
<b>B. Sc. In Computer Engineering (Software)</b>	Iran University of Science and Technology (IUST)
<i>Thesis Title:</i> output approximation of functions based on input parameters	
Start: September 2008. Finish: September 2012.	
<i>Ranked 2<sup>nd</sup></i> among graduated students in the faculty of Computer Engineering, Iran university of Science and Technology. GPA is <b>17.49</b> from 20 ( <b>3.5</b> from 4).	

## Work Experience

- **Assistant professor**, K. N. Toosi University of Technology (KNTU)
  - Full-time, July 2022 – present, Tehran, Iran
- **Lecturer**, K. N. Toosi University of Technology (KNTU)
  - Part-time, Sep. 2021 – July 2022, Tehran, Iran
- **Lecturer**, Iran University of Science and Technology (IUST)
  - Part-time, Sep. 2014 – July 2022, Tehran, Iran
- **Lecturer**, Islamic Azad University South Tehran Branch
  - Part-time, Sep. 2020 – July 2022, Tehran, Iran
- **Lecturer**, Shahid Beheshti University
  - Part-time, Sep. 2020 – June 2021, Tehran, Iran

## Academic Experience

- *SPRITZ – Security & Privacy research group* / Department of mathematics, University of Padova, Padova, Italy. (2017~2018)

- Producing antimalware tools, Software analysis tools.
- Extraction of software behaviors and analyzing significant malicious behaviors
- Checking printers' vulnerabilities.
- Detection of malicious / P2P servers URLs
- Network Packets analysis
- Machine learning and deep learnings model generation
- *Laboratory of Reverse Engineering* / Department of Computer Science, Iran University of Science and Technology, Tehran, Iran (2010~2020)
  - Teacher Assistant, Compiler Design, Reverse Engineering.
  - Producing antimalware tools, Sandbox and malware analysis tools.
  - Extraction of software behaviors and analyzing significant malicious behaviors
  - Software testing and their security checking.
  - Experiments on datamining and significant subgraph extraction.

## Expert

### Research Interests

- Security – malware analysis and detection, privacy, vulnerability, and exploitation
- Machine learning
- Security - Code Protection, Obfuscation
- Reverse Engineering
- Code review
- Abstract Interpretation
- Big Data and Parallel Processing
- Compilers and Parallelizing Compilers
- Software Testing
- Software Engineering
- Networks
- Web Development
- Software Rejuvenation

### Programming Language

- Assembly
- C\C++
- C#
- Python
- Unix-based Programming
- Ruby
- SQL
- PHP
- MATLAB
- VASP
- CUDA
- Java SE\EE\Android
- HTML\CSS\JavaScript\PHP
- R Programming
- Visual Paradigm
- Rational Rooz

I believe that a programmer is language free and can code by various languages.

## Publications

### Journal Papers

[J20], **Mohammadhadi Alaeiyan**, Saeed Parsa. A hierarchical layer of atomic behavior for malicious behaviors prediction. In (Springer) *Journal of Computer Virology and Hacking Techniques*, 2022. 10.1007/s11416-022-00422-5 (ISI, IF 4.21, Q1)

[J2], **Mohammadhadi Alaeiyan**, Saeed Parsa, Vinod P., Mauro Conti. Detection of Algorithmically-Generated Domains An adversarial machine learning approach. In (Elsevier) *Computer Communication*, 160, 661-673, 2020. 10.1016/j.comcom.2020.04.033, (ISI, IF 3.066, Q1)

[J1], **Mohammadhadi Alaeiyan**, Saeed Parsa, Mauro Conti. Analysis and Classification of Context-based Malware Behavior. In (Elsevier) *Computer Communication*, 136, 76-90, 2019. 10.1016/j.comcom.2019.01.003, (ISI, IF 3.066, Q1)

[J13], **Mohammadhadi Alaeiyan** and Amirabbas Abedi. Perfect 3-colorings of the Johnson graphs J(4,2), J(5, 2), J(6, 2) and Petersen graph. In *ARS COMBINATORIA*, 140, 199-213, 2018. (ISI, IF 0.247, Q3)

[J4], Mehdi Alaeiyan, Amirabbas Abedi, **Mohammadhadi Alaeiyan**. Perfect 3-colorings of the Johnson graph J(6, 3). In *Bulletin of the Iranian Mathematical Society*, 1-10, 2020. 10.1007/s41980-019-00346-9, (ISI, IF 0.390, Q3)

[J17], **Mohammadhadi Alaeiyan** and Saeed Parsa. Analysis of disassembled executable codes by abstract interpretation. In *International Journal of Nonlinear Analysis and Applications*, 10(1), 9-13, 2019. 10.22075/IJNAA.2019.4048, (ISI)

[J6], **Mohammadhadi Alaeiyan**, Ali Dehghantanha, Tooska Dargahi, Mauro Conti, Saeed Parsa. A Multi-label Fuzzy Relevance Clustering system for Malware Attack Attribution in the Edge Layer of Cyber-Physical Networks. In *ACM Transactions on Cyber-Physical Systems (TCPS)*, 4(3), 1-22, 2020. 10.1145/3351881, (ISI, Q2)

[J3], **Mohammadhadi Alaeiyan** and Hamed Karami. Perfect 2-colorings of the Platonic graphs. In *International Journal of Nonlinear Analysis and Applications*, 8(2), 29-35, 2017. (ISI)

[J7], Saeed Parsa and **Mohammadhadi Alaeiyan**. A combination of curve fitting algorithms to collect a few training samples for function approximation. In *JOURNAL OF MATHEMATICS AND COMPUTER SCIENCE-JMCS*, 17(3), 355-364, 2017. (ISI)

[J19], **Mohammadhadi Alaeiyan**. The edge-labeling and vertex-colors of Kn. In (Springer) *Mathematical Sciences*, 6(45), 2012. 10.1186/2251-7456-6-45, Online ISSN=2251-7456, Print ISSN=2008-1359. (ISI)

## Conference papers

[C5], Hassan Naderi, Vinod P., Mauro Conti, Saeed Parsa, **Mohammadhadi Alaeiyan**. Malware Signature Generation using by Locality Sensitive Hashing, In Proceedings of the 2nd ISEA International Conference on Security & Privacy 2018 (ISEA ISAP 2018), MNIT, Jaipur, India, January 9-11, 2019.

[C4], **Mohammadhadi Alaeiyan**, Saeed Parsa. Automatic loop detection in the Sequence of system calls. In 2nd international conference on knowledge-based engineering and innovation, Tehran, Iran, 2015.

## Persian journal papers

[J22], Seyed Ata S. Jafari, **Mohammadhadi Alaeiyan**, and Saeed Parsa. An automated approach to analysis and classification of Crypto-ransomwares' family, Biannual Journal Monadi for Cyberspace Security (AFTA), 8 (2), 75-88, 2020 (۱۳۹۹).

[J9], Saeed Parsa, **Mohammadhadi Alaeiyan**. دسته بندی خانواده باج افزارهای رمزگذار با استفاده از پرونجاهای دام. In *پدافند الکترونیکی و سایبری* - دانشگاه جامع امام حسین (ع) In press.

[J12], Saeed Parsa, **Mohammadhadi Alaeiyan**, SH. Sadeghnia. تحلیل و شناسایی رفتارهای انتشاری کرم‌ها. In *پدافند غیرعامل* - دانشگاه جامع امام حسین (ع), ۱۰(۱), ۱۰۹-۱۲۲, ۲۰۱۹ (۱۳۹۸).

[J8], Saeed Parsa, Hamidreza Salehi, and **Mohammadhadi Alaeiyan**. مبهم سازی کد به منظور جلوگیری از اجرای نمادین. In *پدافند الکترونیکی و سایبری* - دانشگاه جامع امام حسین (ع), ۶(۱), ۱-۱۶, ۲۰۱۸ (۱۳۹۷).

[J14], Saeed Parsa Hassan Saifi, and **Mohammadhadi Alaeiyan**. ارائه یک رهیافت جدید مبتنی بر گراف وابستگی بین فراخوانی های. In *پدافند الکترونیکی و سایبری* - دانشگاه جامع امام حسین (ع), ۴(۳), ۴۷-۶۰, ۲۰۱۶. سیستمی برای استخراج الگوهای رفتاری مخرب (۱۳۹۵).

## Persian conference papers

[C3], Saeed Parsa and **Mohammadhadi Alaeiyan**, تولید امضای بدافزارها با استفاده از خوشه بندی به روش درهمسازی حساس به محلیت, In International Conference on Combinatorics, Cryptography and Computation, Tehran, Iran, 2016.

[C2], Saeed Parsa and **Mohammadhadi Alaeiyan**, مبهم سازی کد با استفاده از تفسیر انتزاعی, In International Conference on Combinatorics, Cryptography and Computation, Tehran, Iran, 2016.

[C1], Hadi Salehi and **Mohammadhadi Alaeiyan**, ارائه یک فرا - معماری سامانه ای از سامانه ها مبتنی بر ارزیابی فازی, In International Conference on Combinatorics, Cryptography and Computation, Tehran, Iran, 2016.

























## Teaching Experience

- Design and Analysis of Algorithms, B.Sc., 3 semesters, IUST and KNTU.

- Data Structure, B.Sc., 1 semester, KNTU.
- C++ Programming language, B.Sc., 15 semesters, IUST and Islamic Azad University.
- Design Compiler, B.Sc., 2 semesters, IUST and Islamic Azad University.
- Boolean algebra, B.Sc., 5 semesters, IUST.
- Datamining, B.Sc., 1 semester, IUST.
- Advance software engineering, M.Sc., 2 semesters, IUST and Islamic Azad University (Foreign Students).
- Reverse engineering, M.Sc., 2 semesters, IUST.
- Advance Design Compiler, M.Sc. 2 semesters, IUST and Islamic Azad University (Foreign Students).
- Software Fault Tolerance, M.Sc., 1 semester, Shahid Beheshti University.
- Software Evolution, M.Sc., 1 semester, Shahid Beheshti University and IUST.
- Algorithm and Computation, M.Sc., 2 semesters, IUST.
- Advanced Design and Analysis of Algorithms, M.Sc., 1 semester, Islamic Azad University (Foreign Students)

## Journals Referee

I have reviewed more than 40 papers which were pre-review of international journals like:

 (20) IEEE Access 	 (4) The Journal of Supercomputing 
 (2) IEEE Transactions on Neural Networks and Learning Systems 	 (1) Concurrency and Computation: Practice and Experience 
 (1) Future Generation Computer Systems 	 (1) IEEE Transactions on Emerging Topics in Computing 
 (1) IEEE Transactions on Reliability 	 (1) IEEE Transactions on Sustainable Computing 
 (1) IET Image Processing 	 (1) IET Information Security 
 (1) KSII Transactions on Internet and Information Systems 	 (1) PeerJ Computer Science 

## Program Chair

- Executive conference chair of International Conference on Combinatorics, Cryptography, Computer Science and Computation (2016, 2017, 2018, 2019, 2020, 2021, 2022)
- Executive conference chair of 17th International ISC Conference on Information Security and Cryptology (ISCISC'20)
- Executive conference chair of 14th Iranian International Group Theory Conference (igt2022)

## Selected Scientific Developed Software

- VECG
  - It is environment satisfier of executed program with the Parsa Sandbox
- LMS-RemoteVirtualClass
  - Learning Management System provided by Moodle and Adobe connect. Online: 2.181.1.226:8080 and 2.181.30.230
- Sahbad
  - Digital multimedia database based on Dspace.
- Ayannews
  - A Persian news express, site: [www.ayannews.ir](http://www.ayannews.ir).
- Parsa Sandbox
  - It is a Sandbox for screen various malware and reports the malware activities.
- An obfuscator
  - This obfuscator uses Static analysis tools to collect code information and generates a more complex code than that be before.

- Static Analysis tools
  - A static analysis tool which collects information about the intervals of the variables based upon abstract interpretation.
- Parsa antivirus
  - I worked and studied in statically malware detection, and I presented a tool.
- Disassembler
  - It is a software that gets a binary file (.EXE) and disassembles it to assembly language. This disassembler has countermeasure methods against anti-disassembling techniques such as JankBytes, opaque predicate, indirect jumps.
- CFG generator
  - After disassembling a binary file, this tool builds Control Follow Graph (CFG). It wrote in Java and C++.
- OllyDBG plugin
  - It is a plugin for OllyDBG that tries to solve some anti-disassembly problems.
- Live Variable
  - Finding Live Variable into the assembly codes.
- API Logger
  - A software that loges each API call of every software. It works in 32bits window OS.
- Jeez
  - It is a scientific software. It is a firewall for webservers, it protects webservers from SQL injection and XSS attacks such as OWSB.
- MyLibrary
  - It Is a software to store, manage and reserve the books and e-books. It wrote in C#, and its database is SqlServer.
  - It has 2 versions.
- Similar C language Compiler
  - It is a similar C language Compiler. It wrote in java and antler.
- Java to Pascal converter
  - It is a Java to Pascal Converter; it wrote in C language and Lex & Yack.
- Making TCP Connections by UDP Connections.
  - It is a software for simulating TCP connection with UDP connection.
- Register allocation
  - Graph Coloring Register allocation
    - Briggs
    - Chaitin
- Distributed System connection
  - A machine sends a job or request to another machine. It wrote in C language for Linux OS.
  - Lamport Time Stamps. JAVA
- Fp-growph
  - It is a software that implemented Fp-growph method. Fp-growph is a data mining method.
- AoutounitTester
  - It is a software that uses Nunit and approximate outputs of a function and test them.
- GraphBaseCC
  - Graph-Based Protocols. It is a Concurrency Controls for database transaction.
- Graph Mining
  - A software performs data mining with Graph.

## References

- Prof. Saeed Parsa,
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