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RESEARCH INTERESTS

- Language-based Security
- Formal Methods of Information Security
- Programming Languages
- Compiler Design

EDUCATION

- **Amirkabir University of Technology** (Tehran Polytechnic), Tehran, Iran
  Ph.D. Student, Computer Engineering, Software
  September 2017 - now
  GPA: **TBA** / 20

- **Amirkabir University of Technology** (Tehran Polytechnic), Tehran, Iran
  M.Sc., Information Technology, Information Security
  September 2015 - September 2017
  GPA: **17.89** / 20

- **Amirkabir University of Technology** (Tehran Polytechnic), Tehran, Iran
  B.Sc., Computer Engineering, Software
  September 2011 - September 2015
  GPA: **17.69** / 20

- **Refah** High School, Semnan, Iran
  Diploma in Mathematics and Physics
  September 2007 - June 2011
  GPA: High School **19.26** / 20 , Pre-University **19.52** / 20

HONORS AND AWARDS

- The **Youngest** Lecturer (at age 22) and Lab. Instructor (at age 20), CEIT, AUT.

- Honored as the **Best Teaching Assistant** (Spring 2017, Fall 2017) and the **Best Lab. Instructor** (Fall 2016) according to students evaluation, CEIT, AUT.

- Offered for **Direct Admission** to graduate school (**Ph.D.**) in Computer Engineering - Software, **University of Tehran** and **Amirkabir University of Technology**, 2017.

- Awarded as the **Outstanding Student** and achieved **1st** place among 2015-beginner graduate students in Information Security major, AUT, 2016 and 2017.

- **Outstanding Graduate Student Fellowship**, AUT, 2016.

- Achieved **43rd** place among all applicants for the M.Sc. University Entrance Nationwide Exam in Information Technology, Iran, 2015.

- Awarded as an Active Member of **Student Scientific Association of Computer Engineering and IT Department** (Awarded as The best Student Scientific Association of the University), AUT, 2015.

- Qualified to **Direct Admission** to graduate school (**M.Sc.**) of Computer Engineering and IT Department, AUT, 2014.

- Selected as a member of **National Scientific Olympiad** in Computer Engineering team of AUT (3rd place among undergraduate students), 2014.

- Achieved top **2%** place among all applicants for the University Entrance Nationwide Exam (Approximately 260000 applicants) in Math. and Eng., Iran, 2011.

- Skipped **Three** grades of elementary school en masse as an exceptional talent, Tehran, Iran, 2002.

RESEARCH EXPERIENCES

- **Research Assistant,** *January 2015 - present*
  Formal Security Lab.

  Improving Multi-Execution-based Mechanisms for Enforcing Information Flow Policies, - M.Sc. Project *November 2015 - present*
  Recently, much progress has been made on achieving information flow security via Secure Multi-Execution (SME). SME as an elegant dynamic technique enforces security by running one execution of the program per security level, and reinterpreting input/output operations w.r.t their associated security level. Improving its transparency and precision with relaxing the assumptions and adding features to the mechanism is our research goal.

  A Tool for Rewriting-Based Enforcement of Noninterference in While Programs - B.Sc. Project, *March 2015 - September 2015*
  Program rewriting has recently been suggested as a means of enforcing security policies and proven more powerful than execution monitoring and static analysis. In this project, we implemented a novel, sound and transparent rewriting mechanism to enforce progress-sensitive and -insensitive noninterference information flow policies in programs with observable intermediate values using program dependence graphs. More info: http://ceit.aut.ac.ir/formalsecurity/rewriter/tool

- **Static Analysis of Unsafe Use of Variables in Java,** *Spring 2014*
  Reviewing the notion of unsafe use of variables, a dependency safety property violation pattern, due to exception occurrences. Also, studying a static approach using control flow graph and data flow analysis to automatically detect this kind of patterns that may introduce potential bugs in Java programs. The research has been done for Research Method and Technical Report Writings course (Technical Report, Oral Presentation, and Poster).

TEACHING EXPERIENCES

- **Lecturer, Advanced Programming**, CEIT, AUT *Spring 2018*
- **Teaching Assistant, Design of Programming Languages,**
  Under supervision of Prof. Fallah *Fall 2014, Fall 2015, Fall 2016, Fall 2017*
- **Teaching Assistant, Data Structures,**
  Under supervision of Prof. Dehghan *Fall 2013, Fall 2014, Fall 2016, Fall 2017*
- **Teaching Assistant, Discrete Mathematics,**
  Under supervision of Prof. Fallah *Spring 2014, Spring 2016, Spring 2017*
- **Teaching Assistant, Principles of Compiler Design,**
  Under supervision of Prof. Razzazi *Spring 2016, Fall 2016, Spring 2017*
- **Instructor, Operating Systems Lab.,**
  Under supervision of Prof. Bakhshi *Spring 2016, Fall 2016*
- **Instructor, Computer Lab.,**
  Under supervision of Prof. NickAbadi *Fall 2016 (two groups)*
- **Teaching Assistant , Advanced Programming,**
  Under supervision of Prof. Noorhosseini *Spring 2013, Spring 2014, Spring 2015*

- **Teaching Assistant**, **Computer Networks II**,
  Under supervision of Prof. Sabaei   *Spring 2015*

- **Teaching Assistant**, **Information Storage and Retrieval**,
  Under supervision of Prof. NickAbadi   *Spring 2015*

- **Teaching Assistant**, **Software Engineering I**,
  Under supervision of Prof. Pourvatan   *Fall 2014*

- **Teaching Assistant** , **Computer Architecture**,
  Under supervision of Prof. Zarandi   *Spring 2014*

PUBLICATIONS AND TECHNICAL REPORTS

- **S.M.M. Ahmadpanah** *"Dynamic Enforcement of Security Hyperproperties"* - report for Seminar course (In Persian), AUT, 2016.

- **S.M.M. Ahmadpanah**, E. Edalat *"Formal Analysis of Kerberos v5"* - project report for Security Protocols course (In Persian), AUT, 2016.

- **S.M.M. Ahmadpanah**, *"A Tool for Rewriting-Based Enforcement of Noninterference in While Programs"* - B.Sc. Thesis (In Persian), AUT, 2015.

TALKS

- **S.M.M. Ahmadpanah** *"Monitoring-Oriented Programming"* - GradTalk (In Persian), Computer Engineering and IT Department, AUT, 2017.

- **S.M.M. Ahmadpanah** *"Dynamic Enforcement of Security Hyperproperties"* - Oral presentation for Seminar course (In Persian), AUT, 2016.

- **S.M.M. Ahmadpanah** *"Probabilistic Noninterference"* - Oral presentation for seminar of Formal Models and Information Security course (In Persian), AUT, 2016.

- **S.M.M. Ahmadpanah**, *"Static Analysis of Unsafe Use of Variables in Java"* - Oral presentation for Research Method and Technical Report Writings course (In Persian), AUT, 2014.

WORK EXPERIENCES

- **Amirkabir University of Tech. CERT Lab. (A.P.A.)**,   *Summer 2015*
  Software Tester and Developer

- **Rayan Pardazan Nikro Emertat (RAPNA)**,   *Summer 2014*
  Software Engineer and Web Developer (PHP server-side for an Android application) - Summer Internship.

- **Sharif University of Technology Research Center**,   *May 2012 - present*
  Question Designer and Checker of several Employment Exams

TOP ACADEMIC COURSE PROJECTS

- **Software Systems Security**,
  Threat Modeling and Bug Filing of a File Integrity Checker

- **Network Security**,
  Security Mechanisms and Defense Techniques in different layers of Computer Networks

- **Database Security**,
  Security in Oracle including User Management, Roles, VPD and Auditing

- **Security Protocols**,
  Formal Analysis of Kerberos v5 Protocol with MaudePSL

- **Secure Computer Systems**,
  BufferOverFlow in SELinux and MSSQL Security Survey

- **Cryptology**,
  TwoFish Cryptosystem: 256-bit Expansion and, Linear and Differential Analysis

- **Compiler Design**,
  Implementing a front-end compiler for a programming language using flex and bison. The project has been done using Java and C in two versions.

- **Programming Languages**,
  Developing an interpreter using ML language. The project has been done using lex, yacc, and other abilities of OCaml.

TECHNICAL SKILLS

- **Programming Languages:**
  Java, C/C++, Mips, ML, OCaml, Lisp, Racket, Shell Scripting.

- **Database Systems:**
  MySQL, MongoDB.

- **Operating System:**
  Windows, Linux (Ubuntu, Fedora and Kali).

- **Web Development:**
  HTML (XHTML and HTML 5), CSS, JavaScript, jQuery, PHP, XML, XSLT, J2EE.

- **Other:**
  MS Threat Modeling Tool, PREfast, GNS3, MaudePSL, SELinux, UML, Flex and Bison, Boson NetSim, Cisco Packet Tracer, MS Project, VHDL, Verilog, Orcad Pspice, Proteus.

LANGUAGES

- **Persian** (Farsi) : *Mother tongue (Native)*

- **English** : *Professional working proficiency*

REFERENCES

- **Mehran S. Fallah, Associate Professor**
  Computer Engineering and IT Department, Amirkabir University of Technology
  Email: `msfallah@aut.ac.ir`

- **MohammadReza Razzazi, Professor**
  Computer Engineering and IT Department, Amirkabir University of Technology
  Email: `razzazi@aut.ac.ir`

- **Mehdi Dehghan TakhtFooladi, Professor**
  Computer Engineering and IT Department, Amirkabir University of Technology
  Email: `dehghan@aut.ac.ir`

- **Seyed Majid Noorhosseini, Assistant Professor**
  Computer Engineering and IT Department, Amirkabir University of Technology
  Email: `majidnh@aut.ac.ir`

- **Masoud Sabaei, Associate Professor**
  Computer Engineering and IT Department, Amirkabir University of Technology
  Email: `sabaei@aut.ac.ir`

- **HamidReza Zarandi, Associate Professor**
  Computer Engineering and IT Department, Amirkabir University of Technology
  Email: `h_zarandi@aut.ac.ir`

- **Bahador Bakhshi, Assistant Professor**
  Computer Engineering and IT Department, Amirkabir University of Technology
  Email: `bbakhshi@aut.ac.ir`

- **Ahmad NickAbadi, Assistant Professor**
  Computer Engineering and IT Department, Amirkabir University of Technology
  Email: `nickabadi@aut.ac.ir`

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