

# KOOSHA MARASHI

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## CONTACT INFORMATION

Missouri University of Science and Technology (Missouri S&T)  
113 Engineering Research Lab  
500 W. 16th St.  
Rolla, MO 65409-6522  
Phone: (573) 202-8465  
E-mail: km89f@mst.edu  
Web page: <http://www.mst.edu/~km89f>  
Linkedin: <http://www.linkedin.com/in/koosham>

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## EDUCATION

- 8/2012–Present **Ph.D. in Computer Engineering** (anticipated graduation date: 5/2017)  
Missouri S&T, Rolla, MO  
Thesis: *Modeling and Analysis of Cyber-Physical Systems: Dependability of Critical Infrastructures*  
Advisor: Dr. Sahra Sedigh Sarvestani  
**GPA: 3.83/4.0**
- 9/2006–2/2011 **B.S. in Electrical Engineering**  
Isfahan University of Technology, Isfahan, Iran  
**GPA: 15.61/20**
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## WORK EXPERIENCE

- 9/2012–Present ***Graduate Research/Teaching Assistant***  
*Missouri S&T, Department of Electrical and Computer Engineering, Rolla, MO*  
Developed reliability and survivability models for critical infrastructures.  
Proposed a model for quantification of interdependencies in cyber-physical systems.  
Made a VLF signal detector for underwater communications.
- 5/2016–8/2016 ***Software/Hardware Development Intern***  
*Kalscott Eng., Lawrence, KS*  
Worked on an automated air-band radio for UAVs. Main tasks include migrating to a Linux-powered single-board computer and adding speech recognition feature.
- 5/2015–8/2015 ***Web/Application Development Intern***  
*Intellispeak LLC, Lawrence, KS*  
Developed an information network for e-health services based on Gimbal Bluetooth beacons.  
Were responsible for development of web server, Android application, database, and web interface.
- 5/2014–8/2014 ***Software/Hardware Development Intern***  
*Kalscott Eng., Lawrence, KS*

Designed and developed an automated air-band radio for UAVs. This system is able to predict intent of the UAV and inform nearby traffic.

8/2010–6/2012 **Research Assistant**

*Industrial Automation Research Center, Isfahan University of Technology, Isfahan, Iran*

Made a 10-channel stand-alone data logger.

Designed and developed a PC-based data acquisition system for ion-mobility spectrometry.

9/2011–2/2012 **Electrical Engineer**

*Beh-Azmoon Co., Isfahan, Iran*

Created a wireless crack monitoring system for structural health monitoring (funded by Iran's Cultural Heritage Organization, a government agency).

11/2006–10/2010 **Research Assistant**

*Robotics Research Center, Isfahan University of Technology, Isfahan, Iran*

Developed navigation system, sensor fusion algorithm, and fuzzy logic motor controller for LynCean mobile robot.

Implemented a motion planning algorithm for Persia soccer robots.

2/2010–9/2010 **Design Engineer**

*Farman Khodro Co., Isfahan, Iran*

Designed an electric power steering system for Iran-Khodro Samand automobile.

10/2009–8/2010 **Research Assistant**

*Automotive Research Group, Isfahan University of Technology, Isfahan, Iran*

Prototyped an engine control unit for Honda GX35 engine.

Developed an electrical dynamometer for low-power engines.

6/2008–1/2009 **Research Assistant**

*Artificial Intelligence Laboratory, Isfahan University of Technology, Isfahan, Iran*

Implemented a walking algorithm and developed a motor controller for Parsa humanoid robot.

Designed a test bed for measuring backlash of servo motors.

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## PATENTS

Wireless Temperature Monitoring System for Centrifugal Casting, Pat. No. 81750, Iran, 2014

2D Wireless Structural Crack Monitoring System, Pat. No. 62181, Iran, 2010

Handheld Data Logger for Agricultural Applications, Pat. No. 61142, Iran, 2010

Life Detector Robot with Adjustable Functionality, Pat. No. 60845, Iran, 2009

Extendable DC Motor Controller System, Pat. No. 60839, Iran, 2009

An Innovative Co-Axial Rotation Mechanism, Pat. No. 60847, Iran, 2009

Robust Track Mechanism for Locomotion of Mobile Robots, Pat. No. 60849, Iran, 2009

Lightweight Robust Platform for Mobile Robots, Pat. No. 60848, Iran, 2009

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## REFEREED CONFERENCE PUBLICATIONS

K. Marashi, S. Sedigh, and A. Hurson, “Quantification and Analysis of Interdependency in Cyber-Physical Systems,” *In Proceedings of the 3<sup>rd</sup> International Workshop on Reliability and Security Aspects for Critical Infrastructure Protection (ReSA4CI '16)*, Toulouse, France, Jun. 2016.

K. Marashi and S. Sedigh, “Towards Comprehensive Modeling of Reliability for Smart Grids: Requirements and Challenges,” *In Proceedings of the 15<sup>th</sup> IEEE International Symposium on High-Assurance Systems Engineering (HASE)*, pp. 105-112, Miami, FL, Jan. 2014. Selected for appearing in 2<sup>nd</sup> issue of 2015 Science of Security Newsletter.

K. Marashi, M. Woodard, S. Sedigh, and A. Hurson, “Quantitative Reliability Analysis for Intelligent Water Distribution Networks,” *In Proceedings of the Embedded Topical Meeting on Risk Management for Complex Socio-Technical Systems (RM4CSS)*, Annual Meeting of the American Nuclear Society, Washington, D.C., Nov. 2013.

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## HONORS AND AWARDS

National University Transportation Center Fellowship, US Department of Transportation, 2013  
Scholarship to attend summer school on Trustworthy Cyber Infrastructure for the Power Grid, IL, 2013

Fellowship from Missouri S&T Vice-Provost for Graduate Studies, 2012

Gold Medal, 38<sup>th</sup> Geneva Invention Exhibition, Switzerland, 2010

Best Invention Award (from Russian Incubator), 38<sup>th</sup> Geneva Invention Exhibition, Switzerland, 2010

Outstanding Undergraduate Researcher Award, Isfahan University of Technology, Iran, 2009

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## PROFESSIONAL ACTIVITIES

Reviewer, Journal of Mathematics and Computer Science, 2016

Reviewer, IEEE International Computers, Software & Applications Conference (COMPSAC), 2016

Reviewer, IEEE International Computers, Software & Applications Conference (COMPSAC), 2015

Reviewer, IEEE International Green Computing Conference (IGCC), 2014

Reviewer, IEEE International Symposium on High Assurance Systems Engineering (HASE), 2014

Reviewer, IEEE International Conference on Software Security and Reliability (SERE), 2014

Reviewer, IEEE International Conference on Software Security and Reliability (SERE), 2013

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## PROFESSIONAL DEVELOPMENT

Graduate Teaching Assistant Workshop, Missouri S&T, Rolla, MO, 2014

Research & Technology Development Conference, Missouri S&T, Rolla, MO, 2014

Transportation Infrastructure Conference, Missouri S&T, Rolla, MO, 2014

IEEE/Ameren Lean Fundamentals Workshop, Ameren, St. Louis, MO, 2014  
 Presenting Data and Information by Edward Tufte, Fairmont Chicago, Chicago, IL, 2014  
 IEEE Seminar on Modeling Cyber Attack-Defense Interactions, Missouri S&T, Rolla, MO, 2013  
 Engineering Management & Systems Engineering Graduate Seminar - A Survey of Applications and Future Directions of Computational Intelligence, Missouri S&T, Rolla, MO, 2013  
 Transportation Infrastructure Conference, Capitol Plaza Hotel, Jefferson City, MO, 2013  
 Trustworthy Cyber Infrastructure for the Power Grid (TCIPG) Summer School, Q Center, St. Charles, IL, 2013

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#### PROFESSIONAL SOCIETY MEMBERSHIP

IEEE Student Member, Since 2013  
 IEEE - Eta Kappa Nu Member, Since 2014 ACM Student Member, Since 2015  
 ACM - SIGMETRICS Member, Since 2015  
 National Society of Professional Engineers Student Member, Since 2015

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#### TECHNICAL SKILLS

Programming Languages:	Python, C/C++, Java, SQL, Verilog, Assembly
Web Technologies:	HTML, JavaScript, jQuery, CSS, Amazon AWS/EC2
Development Tools:	Eclipse, PyCharm, Android Studio, Git, Keil
Computer Software:	LabVIEW (CLAD certificate, issued 5/13), MATLAB & Simulink, OrCAD, L <sup>A</sup> T <sub>E</sub> X, SAS, JMP, Active HDL, Xilinx ISE
Programmable Devices:	AVR and ARM-based Microcontrollers, FPGA, CPLD
Communication Protocols:	TCP/IP, 802.03, 802.11, UART, SPI, I <sup>2</sup> C, ZigBee, Bluetooth
Operating Systems:	Windows, Linux (Ubuntu, Raspbian), Android
Miscellaneous:	Digital and analog circuit design, PCB design, Android application development