

# Koosha Marashi

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## Education

### Missouri University of Science and Technology (Missouri S&T)

Rolla, MO

PH.D. IN COMPUTER ENGINEERING

Aug. 2012 – July 2017

- **Dissertation:** Quantitative Dependability and Interdependency Models for Cyber-Physical Systems
- **Advisor:** Dr. Sahra Sedigh Sarvestani
- **GPA:** 3.83/4.0

### Isfahan University of Technology (IUT)

Isfahan, Iran

B.S. IN ELECTRICAL ENGINEERING

Sep. 2006 – Feb. 2011

- **GPA:** 15.61/20

## Work Experience

### Missouri S&T, Department of Electrical and Computer Engineering

Rolla, MO

GRADUATE RESEARCH ASSISTANT

Aug. 2012 – Present

- Developed reliability and survivability models for critical infrastructures.
- Proposed a model for analysis of interdependencies in cyber-physical systems.

### Kalscott Eng.

Lawrence, KS

SOFTWARE/HARDWARE DEVELOPMENT INTERN

May 2016 – Aug. 2016

- 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.

### Intellispeak LLC

Lawrence, KS

FULL-STACK DEVELOPMENT INTERN AND CO-OP

May 2015 – May 2016

- Developed an information network for e-health services based on Gimbal Bluetooth beacons.
- Was responsible for development of server back-end, Android app, database, and web interface.

### Kalscott Eng.

Lawrence, KS

SOFTWARE/HARDWARE DEVELOPMENT INTERN

May 2014 – Aug. 2014

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

### Industrial Automation Research Center, IUT

Isfahan, Iran

RESEARCH ASSISTANT

Feb. 2011 – Jun. 2012

- Made a 10-channel stand-alone data logger.
- Designed and developed a PC-based data acquisition system for ion-mobility spectrometry.

### Beh-Azmoon

Isfahan, Iran

FIRMWARE ENGINEER

Aug. 2010 – Feb. 2011

- Created a wireless crack monitoring system for structural health monitoring

### Robotics and Automotive Research Center, IUT

Isfahan, Iran

RESEARCH ASSISTANT

Feb. 2010 – Aug. 2010

- Developed navigation system and sensor fusion algorithm for LynCean mobile robot.
- Implemented a motion planning algorithm for Persia soccer robots.
- Implemented a walking algorithm and developed a motor controller for Parsa humanoid robot.
- Prototyped an engine control unit for Honda GX35 engine.
- Developed an electrical dynamometer for low-power engines.

## Leadership Activities

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### Eta Kappa Nu Honor Society - Gamma Theta Chapter

ACTIVE MEMBER

Rolla, MO

Mar. 2014 – Present

- Attended regular meetings and helped in voluntary services.

### Super-mileage Car Student Design Team

HARDWARE DEVELOPMENT LEADER

Isfahan, Iran

Oct. 2009 – Aug. 2010

- Communicated status and issues to cross-functional teams and senior manager.
- Coordinated resources using Microsoft Project.

### NODET Rescue Robot Student Design Team

TEAM LEADER

Isfahan, Iran

Sep. 2008 – Apr. 2009

- Mentored students, helping them to solve problems and make decisions.

## Honors and Awards

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2013	<b>National University Transportation Center Fellowship</b> , US Department of Transportation	Rolla, MO
2013	<b>Travel Scholarship</b> , Trustworthy Cyber Infrastructure for the Power Grid	Urbana, IL
2012	<b>Vice-Provost for Graduate Studies Fellowship</b> , Missouri S&T	Rolla, MO
2010	<b>Gold Medal</b> , 38 <sup>th</sup> Geneva Invention Exhibition	Geneva, Switzerland
2010	<b>Best Invention Award</b> , Russian Incubator of Inventions	Geneva, Switzerland
2009	<b>Outstanding Undergraduate Researcher Award</b> , IUT	Isfahan, Iran

## Patents

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2014	<b>Wireless Temperature Monitoring System for Centrifugal Casting</b> , Pat. No. 81750	Iran
2010	<b>2D Wireless Structural Crack Monitoring System</b> , Pat. No. 62181	Iran
2010	<b>Handheld Data Logger for Agricultural Applications</b> , Pat. No. 61142	Iran
2009	<b>Life Detector Robot with Adjustable Functionality</b> , Pat. No. 60845	Iran
2009	<b>Extendable DC Motor Controller System</b> , Pat. No. 60839	Iran
2009	<b>An Innovative Co-Axial Rotation Mechanism</b> , Pat. No. 60847	Iran
2009	<b>Robust Track Mechanism for Locomotion of Mobile Robots</b> , Pat. No. 60849	Iran
2009	<b>Lightweight Robust Platform for Mobile Robots</b> , Pat. No. 60848	Iran

## Technical Skills

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<b>Programming Languages</b>	Python, C/C++, Java, SQL, Verilog, Assembly
<b>Web Technologies</b>	HTML, JavaScript, jQuery, CSS, Jekyll, D3.js, Amazon AWS/EC2
<b>Development Tools</b>	PyCharm, Android Studio, Eclipse, Git, IntelliJ IDEA, Keil
<b>Computer Software</b>	MATLAB & Simulink, LabVIEW (CLAD certificate, issued 5/13), OrCAD, $\text{\LaTeX}$ , SAS, JMP, Active HDL
<b>Programmable Devices</b>	AVR and ARM-based Microcontrollers, FPGA, CPLD
<b>Communication Protocols</b>	TCP/IP, 802.03, 802.11, UART, SPI, I <sup>2</sup> C, ZigBee, Bluetooth
<b>Operating Systems</b>	Windows, Linux (Ubuntu, Raspbian), Android
<b>Miscellaneous</b>	Digital and analog circuit design, PCB design, Android application development