Koosha Marashi

Contact Information

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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

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.
Developed a model for quantification of interdependencies in cyber-physical systems.
Developed a VLF signal detector for underwater communications.

5/2016–8/2016 ***Software/Hardware Development Intern***
Kalscott Eng., Lawrence, KS
Improved the previously designed automated air-band radio for UAVs. Main improvements include migrating to a small single-board computer with Linux 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.
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.

8/2010–6/2012 ***Research Assistant***
Industrial Automation Research Center, Isfahan University of Technology, Isfahan, Iran
Designed and developed 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
Designed and developed a wireless crack monitoring system used for structural health monitoring (funded by Iran's Cultural Heritage Organization).

11/2006–10/2010 ***Research Assistant***
Robotics Research Center, Isfahan University of Technology, Isfahan, Iran

Designed and implemented 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
Designed and developed a prototype Engine Control Unit (ECU) 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 walking algorithm and developed a motor controller for Parsa humanoid robot.
Designed a test bed for measuring backlash of position servo mechanism motors.

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

Publications

3 refereed conference papers.
2 journal papers submitted.

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^{th} Geneva Invention Exhibition, Switzerland, 2010
Best Invention Award (from Russian Incubator), 38^{th} Geneva Invention Exhibition, Switzerland, 2010
Outstanding Undergraduate Researcher Award, Isfahan University of Technology, Iran, 2009

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, LaTeX, 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^2C, ZigBee, Bluetooth
Operating Systems:	Windows, Linux (Ubuntu, Raspbian), Android
Miscellaneous:	Digital and analog circuit design, PCB design, Android application development