

## Mehdi Mehdikhani



Department of Electrical and Computer Engineering  
Isfahan University of Technology  
Isfahan, Iran

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### RESEARCH INTERESTS

- **Robotics, Mechatronics, Artificial Intelligence, Control Theory, Machine Learning, Human-Robot Interaction, Embedded Systems, Algorithms**
- As an individual with a great enthusiasm for robotics, I am interested in designing and enhancing technologies to create a positive impact on solving real-world robotics problems, which have a very interdisciplinary nature. Consequently, computer science methods (artificial intelligence, machine learning, algorithms), control theory and embedded systems are my tools to encounter with robotics challenges.

### EDUCATION

- **Isfahan University of Technology (IUT)**, B.Sc. in Computer Engineering (Software), Isfahan, Iran. 2012 – Expecting 2016.  
**Last two years GPA (63 credits): 18.2/20**  
**Thesis:** A theoretical study and practical implementation of Simultaneous Localization and Mapping (SLAM) and map-based indoor navigation  
- **Supervisors:** [Dr. Mehdi Keshmiri](#) and [Dr. Nader Karimi](#)
- Diploma in Physics and Mathematics Discipline, **GPA: 19.62/20**

### SELECTED RESEARCH EXPERIENCE & PROJECTS

- **Research Assistant** at Advanced Robotics and Mechatronics Laboratory ([ARMLab](#)), Department of Mechanical Engineering, Isfahan University of Technology, since February 2015
- Design and implementation of a differential drive mobile robot for SLAM and map-based indoor navigation, (**B.Sc. Thesis**) - ([More details](#))
- HMI Design and PLC programming, Water pumping station automation (**Summer Internship**) – ([More details](#))
- High-Precision polishing tool with the ability to control machining forces, (**Industrial Project**) – ([More details](#))
- SOS rescue robot team - Department of Mechanical Engineering, Isfahan University of Technology (**Robocup Team**) – 2014 ([More details](#))
- Modular data acquisition and motor control board (**Patented**) – ([More details](#))
- A model learning approach for general video game playing (GVGP) - (**in preparation** for the journal of “IEEE Transactions on Computational Intelligence and AI in Games”) – ([More details](#))
- Design and implementation of a simple thermal camera by TPA81 thermopile sensor– ([More details](#))
- Two axis gimbal prototype with Dynamixel servo motors and Xsens IMU – ([More details](#))
- Design and implementation of an embedded time and date server – ([More details](#))
- Khayyam robot, junior rescue robot – ([More details](#))
- Bowling Robot – ([More details](#))
- Line follower robot & Solar car – ([More details](#))

(Visit my [website](#) for more information, videos and pictures)

### HONORS AND AWARDS

- Ranked **1st** in the [Kharazmi young competition](#) (the highest ranked scientific competition in Iran hold by top Iranian scientific organizations including “Science & Research Ministry, Education Ministry, Industrial Research Organization, Nation Organization for Development of Exceptional Talents, ...), robotic branch – 2011.
- Ranked among the first 0.07% of more than 260,000 participants in the national entrance exam of universities, 2012.
- Recognized as gifted in the nationwide entry exam of National Organization for the Development of Exceptional Talents (**NODET**), 2003 and 2006.

SKILLS	<ul style="list-style-type: none"> <li>○ <b>Programming Languages:</b> <u>Python</u>, <u>C++</u>, <u>C#</u>, Java, SQL, Lisp, Prolog, AIML, Processing</li> <li>○ <b>Frameworks &amp; Libraries:</b> <u>ROS</u>, OpenCV, PCL, OpenNI, Boost, Qt</li> <li>○ <b>Hardware:</b> <u>AVR</u>, <u>ARM</u>, <u>Arduino</u>, <u>Raspberry Pi</u>, Siemens PLCs and HMIs, Various sensors and modules</li> <li>○ <b>CAD Softwares:</b> <u>Altium Designer</u>, <u>LibreCAD</u>, <u>AutoCAD Electrical</u>, <u>Proteus</u>, <u>Eagle</u>, <u>Axure RP</u></li> <li>○ <b>Development Tools &amp; IDEs:</b> <u>Visual Studio</u>, Qt Creator, Atmel Studio, Keil <math>\mu</math>Vision, Code Vision AVR, IntelliJ IDEA, PyCharm</li> <li>○ <b>Operation Systems:</b> <u>Ubuntu</u>, Microsoft Windows</li> <li>○ <b>Simulators:</b> <u>Gazebo</u>, V-rep</li> <li>○ <b>Communication protocols:</b> <u>RS232</u>, RS485, <u>Ethernet</u>, CAN, SPI, TWI, PROFIBUS</li> <li>○ <b>Other:</b> Microsoft Office (<u>Word</u>, <u>Excel</u>, <u>PowerPoint</u>), LaTeX, Multi-Threading, <u>MATLAB</u> and Simulink, Network Programming, Computer Networks, Unity game engine, <u>Microsoft SQL Server</u>, Microsoft Project, Blender, MeshLab, Bizagi BPMS, Photoshop, ...</li> </ul>		
TEACHING EXPERIENCES	<ul style="list-style-type: none"> <li>○ Advanced Programming (TA), Isfahan University of Technology - Spring 2014</li> <li>○ Embedded Systems Design (TA), Isfahan University of Technology - Spring 2015</li> <li>○ ROS workshop, Isfahan University of Technology - 2015</li> <li>○ PCB Design workshop, Isfahan University of Technology - 2015</li> <li>○ Robotics and electronics trainer in Professor Hesabi Student Research Center - 2011</li> </ul>		
LANGUAGE SKILLS	<ul style="list-style-type: none"> <li>○ <b>Persian:</b> Native, <b>Turkish:</b> Native, <b>English:</b> Professional Fluency</li> </ul>		
RELATED ACADEMIC COURSES	<ul style="list-style-type: none"> <li>• Engineering Mathematics 20/20</li> <li>• Artificial Intelligence 17.5/20</li> <li>• Design and Analysis of Algorithms 18.8/20</li> <li>• Human Computer Interaction 19.4/20</li> <li>• Embedded Systems Design 20/20</li> <li>• Microprocessors 20/20</li> </ul>	<ul style="list-style-type: none"> <li>• Computer Networks 17.5/20</li> <li>• Digital System Design 18.3/20</li> <li>• IT Project Management 20/20</li> <li>• E-Commerce 19.2/20</li> <li>• Industrial Management &amp; Economics 18.8/20</li> </ul>	
HOBBIES	Travelling, Swimming, Hiking, Public Speaking, Music		
REFERENCES	<p><b>Dr. Mehdi Keshmiri</b>  Associate Professor  President of Isfahan Science and Technology Town (<a href="#">ISTT</a>)  Director of <a href="#">Advanced Robotics and Mechatronics Laboratory</a>  Department of Mechanical Engineering  Isfahan University of Technology, Isfahan, Iran</p> <p><b>Dr. Nader Karimi</b>  Associate Professor  Department of Electrical and Computer Engineering  Isfahan University of Technology, Isfahan, Iran</p> <p><b>Dr. Shahram Hadian Jazi</b>  Associate Professor  Department of Mechanical Engineering  Faculty of Engineering  <a href="#">University of Isfahan</a>, Isfahan, Iran</p>		
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