

Mohammadreza Mousaei

PHD CANDIDATE · CARNEGIE MELLON UNIVERSITY

☎ (+1) 312 478 6934 | ✉ mmousaei@andrew.cmu.edu | 🏠 cs.cmu.edu/mmousaei/ | 📷 mmousaei | 📺 mmousaei | 📧 mmousaei

Education

Carnegie Mellon University

PH.D. IN ROBOTICS

Pittsburgh, PA

Aug. 2019 - PRESENT

University of Illinois at Chicago

M.SC. IN ELECTRICAL AND COMPUTER ENGINEERING

Chicago, IL

Aug. 2015 - Dec. 2017

- **Thesis:** Efficient Use of Spectral Resources in Wireless Communication Using Training Data Optimization

Shahid Beheshti University (former National University of Iran)

B.S. IN ELECTRICAL AND COMPUTER ENGINEERING

Tehran, Iran

Sep. 2010 - Jan 2015

Research Experience

Carnegie Mellon University

DOCTORAL RESEARCH ASSISTANT AT AIRLAB

Pittsburgh, PA

Aug. 2019 - present

- Designing and Developing Hardware/Software for Fully Autonomous Delivery VTOL (Vertical Take-off and Landing) with failure redundancy
- Designing and Developing Hardware/Software for Fully Autonomous Aerial Manipulation platform

Adviser: Dr. Sebastian Scherer

Carnegie Mellon University

RESEARCH ASSOCIATE AT FIELD ROBOTICS CENTER

Pittsburgh, PA

Nov. 2017 - Jan. 2019

- Developing Planning Software for DARPA Subterranean Challenge
- Developing Autonomy Software for Pipe Crawler robot
- Developing Software/Hardware custom Lidar for Moon Rover Robot

Adviser: Dr. Sebastian Scherer

Adviser: Prof. William (Red) Whittaker

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University of Illinois at Chicago

RESEARCH ASSISTANT

Chicago, IL

Jun. 2016 - Nov 2017

- Designing a fully integrated radar and communication system – named ComSens
- Optimizing Pilot Overhead for Ultra-Reliable Short-Packet Transmission

Adviser: Dr. Mojtaba Soltanalian

Adviser: Dr. Besma Smida

Work Experience

Near Earth Autonomy

ROBOTICS RESEARCH ENGINEER

Pittsburgh, PA

Jan. 2019 - Aug. 2019

- Flying Outdoors and Indoors with Limited-sensing Aerial Autonomy

PLTW Illinois

NETWORK EXPERT

Chicago, IL

Jun. 2016 - Sep. 2016

- Debug and Troubleshoot Network technical problems

Pish Robot CO

DIGITAL DESIGNER

Tehran, Iran

Jan. 2012 - Jun. 2012

- Designing and Implementing mobile robot's mechanical/control systems

Rahjuyan Sanat Taban CO (RST)

DIGITAL DESIGNER

Tehran, Iran

Jan. 2011 - Dec. 2011

- Design and Implementing digitally controlled current source

Skills

Programming	C/C++, C#, Python, MATLAB, ROS (Robot Operating System), JAVA, VHDL, Verilog, LaTeX, iOS (Swift)
Web	HTML, CSS, JS, php
Embedded Systems	AVR, ARM, FPGA, PLC, NVIDIA Xavier, Intel NUC
PCB Layout	Altium Designer, Eagle
Mechanical 3D Design	Shapr3D, SolidWorks, Catia
Libraries	Persian (native), English (fluent), Arabic(Intermediate)

Honors & Awards

2019	Best Poster Award , 2019 Waste Management Symposia	Phoenix, AZ
2016	UIC Grant Award , College of Engineering	UIC
2014	2nd Place , AUT-CUP Robotic International Competition, Artificial Intelligence league	Amirkabir U. of Tech
2012	2nd Place , ACM ICPC Qualification Programming Contest	S. Beheshti Univ.
2012	19th Place , ACM ICPC West Asia Regional Programming Contest	Sharif U. of Tech

Publications

- A. Keipour, **M. Mousaei**, S. Scherer, **Fully-Actuated UAVs: Control, Analysis and Applications**, *IEEE Robotics and Automation Letters (RA-L)*, Under Review, 2021.
- **M. Mousaei**, J. Geng, A. Keipour, D. Bai, S. Scherer, **Fully-Actuated UAVs: Control, Analysis and Applications**, *IEEE Robotics and Automation Letters (RA-L)*, Under Review, 2021.
- A. Keipour, **M. Mousaei**, S. Scherer, **ALFA: A dataset for UAV fault and anomaly detection**, *The International Journal of Robotics Research (IJRR)*, Oct 2020.
- A. Keipour, **M. Mousaei**, S. Scherer, **Automatic Real-time Anomaly Detection for Autonomous Aerial Vehicles**, *International Conference on Robotics and Automation (ICRA)*, May 2019.
- H. Jones, S. Maley, **M. Mousaei**, D. Kohanbash, W. Whittaker, J. Teza, A. Zhang, N. Jog, W. Whittaker, **A Robot for Nondestructive Assay of Holdup Deposits in Gaseous Diffusion Piping**, *WM Conference 2019*.
- H. Jones, S. Maley, K. Yonekawa, **M. Mousaei**, J. D. Yesso, D. Kohanbash, W. Whittaker, **Automated Analysis, Reporting, and Archiving for Robotic Nondestructive Assay of Holdup Deposits**, *WM Conference 2019*.
- **M. Mousaei**, M. Soltanian, B. Smida, **ComSens: Exploiting Pilot Diversity for Pervasive Integration of Communication and Sensing**, *IEEE Military Conference on Communication*, Oct 2017.
- **M. Mousaei**, B. Smida, **Optimizing Pilot Overhead for Ultra-Reliable Short-Packet Transmission**, *IEEE International Conference on Communication*, May 2017.
- A. Sheikhsafari, S. Gharghabi, K. Sartipi, **M. Mousaei**, A. Sheikhsafari, E. Babaians and S. Shiry Ghidary, **Amirkabir University of Technology (AUT) @Home 2014 Team Description Paper**, *Robocup 2014, Joao Pessoa, Brazil*, Jul. 2014.
- **M. Mousaei**, A. Keipour, E. Babaians, **Automated High-Speed Traffic Monitoring and Violation Detection Using RFID Technology**, *IEEE Iranian Conference on Electrical Engineering*, May 2014.
- A. Keipour, K. Sartipi, **M. Mousaei**, S. Mohammadzadeh, M. Jamzad, **Team Description Paper for Sharif University of Technology (SUT) Team**, *AUTCUP Robotics competitions*, Oct. 2013.