

Bijan Mehralizadeh

Portfolio: bijanmehralizadeh.github.io

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INTEREST

Complex Systems Cyber-physical System System Engineering Cyber Security Robotics

EDUCATION

- **University of Tehran** Tehran, Iran
Master of Science - Mechatronics Engineering; GPA: 3.54/4.0 2017 - 2021
Courses: Advance Robotics (4.0/4.0), Artificial Intelligence (4.0/4.0), Artificial Neural Network (4.0/4.0), Digital Image Processing (4.0/4.0)
- **Shahrood University of Technology** Shahrood, Iran
Bachelor of Science - Mechatronics Engineering; GPA: 3.0/4.0 (last two years) 2012 - 2017

RESEARCH EXPERIENCE

- **Advanced Robotics and Intelligent Systems Lab** University of Tehran
Research Assistant (Supervisor: Hadi Moradi) 2017 - 2021
 - **Multi-modal ASD screening system:** Design and develop a multi-modal Autism screening system for children.
 - **Fully Robotic Social Environment:** Redesign & develop an automated robotic rehabilitation system for teaching and practicing affective interaction for children with ASD.
 - **Intelligent toy car:** Design and develop an IoT device for ASD screening using multi modal features.
 - **Robotic Social Environments:** Design & prototype a robotic platform for Autism therapy for children.
- **Lego Education Center** Shahrood University of Technology
Undergraduate Researcher 2015 - 2017
 - **Autonomous landing system for multi-rotors:** Develop & implement a computer vision auto landing algorithm (Supervisor: Vahid Abolghasemi).
 - **Lego pick and place mobile robot:** Prototype and simulate a Lego Mindstorms EV3 pick and place differential drive robot

TEACHING & MENTORING EXPERIENCE

- **Advanced Robotics and Intelligent Systems Lab** University of Tehran
Mentor 2020 - 2021
 - **Python programming instructor:** Python 101, Algorithms, Image Processing
 - **Robotic instructor:** Python 101, ROS 101, Linux 101
- **Advanced Robotics and Intelligent Systems Lab** University of Tehran
Teaching assistant 2019 - 2020
 - **Advance Robotics course TA:** ROS 101, Gazebo robot simulation, Simulate Anki VECTOR robot
- **Lego Education Center** Shahrood University of Technology
Mentor 2015 - 2017
 - **Python programming instructor:** Python 101, Image Processing
 - **Matlab programming instructor:** Matlab 101, Simulink
 - **Arduino programming instructor:** Arduino 101, IoT systems

PUBLICATIONS

- **ICSR conference 2020:** Soleiman, P., Moradi, H., **Mehralizadeh, B.**, Azizi, N., Anjidani, F., Pouretmad, H. R., Arriaga, R. I. (2020, November). Robotic Social Environments: A Promising Platform for Autism Therapy. In International Conference on Social Robotics (pp. 232-245). Springer, Cham.
- **Under review: Mehralizadeh, B.**, Baradaran, B., Nikkhoo, S., Soleiman, P. Moradi, H. An Intelligent Toy Car for Autism Screening using Multi-Modal Features
- **Under review:** Soleiman, P., Moradi, H., **Mehralizadeh, B.**, Ameri, H., Baghbanzadeh, N., Pouretmad, H. R., Arriaga, R. I. Kashani, L. V. Fully Robotic Social Environment for Teaching and Practicing Aective Interaction: Case of teaching emotion recognition skill to children with Autism

SELECTED PROJECTS

- **TBRD: the hand rehabilitation robot (Control Systems, Embedded System, Sensor Fusion):** Hand spasticity rehabilitation robot for post stroke recovery.
- **Earthquake simulator (System Identification, Sensor Fusion):** A small P-wave earthquake generator, closed loop control system with a high accuracy piezo vibration sensor.
- **Dot & Boxes agent (Reinforcement Learning, Expert System):** A Q-learning agent for Dot&Boxes game, trained with an expert system, winner of campus AI competition.
- **The modular mobile robot (System Integration, Path Planning, Sensor Fusion):** A 3D printed differential drive mobile robot for hand eye coordination training for children with ASD.
- **BAMS: the social robot platform (ROS, Signal Processing, Computer Vision):** An open source inexpensive social robot platform for children with ASD rehabilitation.

SKILLS SUMMARY

- **Programming:** Python, C, C++, Matlab, Bash, Fortran
- **Frameworks:** ROS, Scikit, OpenCV, TensorFlow, Keras, Django, Flask
- **Tools:** GIT, Solidworks, AutoCAD, 3D print softwares
- **Platforms:** Linux, Arduino, Raspberry, Nvidia Jetson, STM32
- **Soft Skills:** Critical thinking, R&D team leadership, Systematic thinking
- **Language:** English (Proficient), Farsi (Native)

VOLUNTEER EXPERIENCE

- **Brain's week exhibition** Tehran, Iran
Introduce the application of machine learning in ASD screening November 2019
- **Tehran annual digital art exhibition** Tehran, Iran
Introduce technology based ASD systems for children with Autism. October 2018

REFERENCES

- **Fariba Bahrami**, Associate Professor at University of Tehran, School of ECE Project supervisor
Email: mfbahrami@ut.ac.ir 2019 - 2022
- **Hadi Moradi**, Associate Professor at University of Tehran, School of ECE M.S. advisor
Email: moradih@ut.ac.ir 2017 - 2021
- **Vahid Abolghasemi**, Assistant Professor at University of Essex, School of CSEE B.S. advisor
Email: v.abolghasemi@essex.ac.uk 2015 - 2017