Bijan mehralizadeh

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Research interests

System engineering, System design, System integration, Autonomous systems
Mobile robotic, Computer vision, AI and ML
CPS, Cyber security, IoT

Education

2017 – 2021 **University of Tehran** – Tehran, Iran
MS in Mechatronics engineering *GPA: 3.54/4.0.*
Adviser: Dr. Moradi, Hadi.
Thesis: multi-modal autism screening system
Design and develop a multi-modal autism screening system for children, it analyzes child behavior with multiple tools and methods and integrates all results to improve screening accuracy.

2012 – 2017 **Shahrood University of Technology** – Shahrood, Iran
BS in Mechatronics engineering *GPA: 3.0/4.0 (last two years)* .
Adviser: Dr. Abolghasmi, Vahid.
Final project: Autonomous landing for small multi-rotors
Develop a vision-based landing algorithm for small size multi-rotors.

Relevant courses

- *Robotics*: 4.0/4.0
- *Artificial Intelligence*: 4.0/4.0
- *Artificial Neural Networks*: 4.0/4.0
- *Digital Image Processing*: 4.0/4.0

Teaching experience

Spring 2020 **Teaching assistant, Advance robotics (University of Tehran)**
ROS and Gazebo training, Simulate Anki VECTOR robot.

Publications

2020 **Robotic Social Environments: A promising platform for autism therapy**
Pegah Soleiman, Hadi Moradi, **Bijan Mehralizadeh**, Negin Azizi, Farid Anjidani, HamidReza Pouretemad and Rosa Arriaga.
The 12th International Conference on Social Robotics (ICSR), Nov. 14-18, pp: 1-12 ,2020, The ICSR committee, Virtual, United States.r.

Under review **Fully Robotic Social Environment for Teaching and Practicing Affective Interaction: Case of teaching emotion recognition skill to children with autism**
Pegah Soleiman, Hadi Moradi, **Bijan Mehralizadeh**, Hamed Ameri, Negin Baghbanzadeh, Hamid Reza Pouretemad, Rosa I. Arriaga, Leila Kashani Vahid.

Research experience

2018 – 2020 **Advanced Robotics and Intelligent Systems Lab**
Mentors: Dr. Moradi, Hadi. (University of Tehran).
Design and develop a ROS based multi-robot platform that uses as a robotic social environment for autism rehabilitation .

Jun 2019 – Nov 2019 **Advanced Robotics and Intelligent Systems Lab**
Mentors: Dr. Moradi, Hadi. (University of Tehran).
Design and develop an IoT smart toy car for autism screening. an SVM does the screening with the integration of accelerometer and encoders data.

Work experience

Dec 2019 – Sep 2020 **Freelancer** – Tehran, Iran
Design and Develop a hand spasticity rehabilitation device for brain injury cases.

Feb 2019 – Nov 2019 **Kanda Idea (R&D team member)** – Tehran, Iran
Python developer, Embedded system developer.

Oct 2016 – Jul 2017 **Lego Education (Intern)** – Shahrood, Iran
Lego Mindstorms EVE3 Programming, LabVIEW Programming.

Jul 2014 – Oct 2014 **Arvin Uzman Co (Intern)** – Tehran, Iran
CAD Designer, CNC Operator, Quality Control.

Selected projects

Oct 2018 – Feb 2019 **Earthquake simulator**
Design and develop a p-wave Earthquake simulator, Implement a real-time active damping system based on a jerk controller.

Oct 2018 – Feb 2019 **Dot&boxes agent**
Develop an agent for Dot and boxes game based on Q-learning method, Winner of the campus AI competition, Develop an epsilon-greedy Q learning agent in Matlab, Develop an expert system for the training phase.

Apr 2018 – Dec 2019 **Baby tank: modular mobile robot**
design and develop an open-source differential drive mobile robot, Implement real-time TCP communication between Matlab and Arduino, develop a Matlab GUI for robot control, develop an app to improve hand-eye coordination.

Oct 2017 – Jan 2018 **BAMS: Interactive social robot**
Design and prototype an open-source social robot platform, Implement an emoji based emotion expression module in C++ on graphical LCD, develop a band-pass noise filtering module for sound-based localization, develop a hand tracking IR sensor array.

Technical skills

Programming languages
Proficient in: Python, Matlab, C
Familiar with: C++, Fortran

Software
LaTeX, Git, ROS, Linux, OpenCV, Keras, Tensorflow, SolidWorks

Languages
English (fluent), Farsi (native)