Amirhossein Noohian

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Last Update: May. 2022

EDUCATION

- **M.Sc. in Mechanical Engineering** Sept. 2019-Mar. 2022
  - Sharif University of Technology (SUT), Tehran, Iran (1st University in Iran according to QS)
  - CGPA: 4.0/4.0 (18.16/20)
  - Thesis Title: Robotic Arm Manipulation Learning from Demonstration based on Reinforcement Learning (19.5/20 – Excellent)
  - Supervisor: Prof. S. Khodaygan
- **B.Sc. in Mechanical Engineering** Sept. 2015-Sept. 2019
  - Amirkabir University of Technology (AUT), Tehran, Iran (2nd University in Iran according to QS)
  - CGPA: 3.92/4.0 (18.92/20) – 2nd rank

RESEARCH EXPERIENCE

- **Remote Graduate Research Assistant** Jan. 2022-Present
  - Developing a Model-Based Reinforcement Learning Algorithm Composed of Model Predictive Path Integral Control and Model-Free Reinforcement Learning, University of Surrey, England
  - Developed a Planner-Estimator Model Predictive Path Integral Controller Robust to Parameter Uncertainties and System Component Failure, University of Surrey, England
    - Supervisor: Prof. S. Fallah
- **Graduate Research Assistant** Mar. 2020-Mar. 2022
  - Developed a Learning from Demonstration Algorithm Composed of Dynamic Movement Primitives and Deep Reinforcement Learning, Mechanical Engineering Department, SUT
  - Developed a Hierarchical Deep Reinforcement Learning Algorithm for Automating the Assembly Process, Mechanical Engineering Department, SUT
    - Supervisor: Prof. S. Khodaygan
- **Research Assistant** Oct. 2018-Oct. 2019
  - Numerically Approximated the Effective Thermal Conductivity of the Checkerboard Composites Subjected to Thermal Loads, Mechanical Engineering Department, AUT
    - Supervisors: Prof. T. Goudarzi and Prof. H. Naderan
- **Research Assistant** Sept. 2017-Oct. 2018
  - Designed and Fabricated a 4-DoF Wrist Rehabilitation Robot, Mechanical Engineering Department, AUT
    - Supervisors: Prof. H. Ghafarirad and Prof. A. Taghvaeipour

PUBLICATIONS

[1] Raisi, M., **Noohian, A.** and Fallah, S. 2022. "A Fault-Tolerant and Robust Controller using Model Predictive Path Integral Control for Free-Flying Space Robots." *Acta Astronautica.* (Submitted)

[2] Raisi, M., **Noohian, A.** and Khodaygan, S. 2022. "Autonomous Robotic Assembly Process based on Hierarchical Reinforcement Learning." *30th Annual International Conference of Iranian Society of Mechanical Engineers (ISME 2022)*, May 10-12, Tehran, Iran.

[3] **Noohian, A.** and Khodaygan, S. 2021. "Learning to Slide Objects from Human Demonstration using Dynamic Movement Primitives." *29th Annual International Conference of the Iranian Society of Mechanical Engineers (ISME 2021)*, May 25-26, Tehran, Iran.

[4] **Noohian, A.**, Khodaygan, S. and Raisi, M. "Learning and Generalization of Dynamic Movement Primitives by Multi-Objective Reinforcement Learning." (In preparation)

TEACHING EXPERIENCE

- **Online Self-Employed Tutor**   Mar. 2022-Present
  - Tutoring Students Online in Machine Learning, Deep Learning, and Reinforcement Learning
- **Graduate Teaching Assistant**   Feb. 2021-Aug. 2021
  - Deep Learning Course, Computer Engineering Department, SUT
    - Lecturer: Prof. H. Beigy
- **Graduate Teaching Assistant**   Sept. 2020-Feb. 2021
  - Optimal Design Course, Mechanical Engineering Department, SUT
    - Lecturer: Prof. S. Khodaygan
- **Teaching Assistant**   Feb. 2019-Jul. 2019
  - Design of Machine Elements II Course, Mechanical Engineering Department, AUT
    - Lecturer: Prof. Y. Alizadeh

WORKING EXPERIENCE

- **Summer Intern**   Jun. 2019-Aug. 2019
  - Neon - Energy Optimization Center, Tehran, Iran
    - Trained in HVAC
- **Educational Consultant**   Sept. 2015-Sept. 2018
  - ASA Academy, Aran & Bidgol, Isfahan, Iran
    - Advised Students about their Preparation for the Nationwide University Entrance Exam
- **Summer Intern**   Jun. 2017-Aug. 2017
  - SAIPA-Kashan Company, Kashan, Isfahan, Iran
    - Trained in Maintenance Strategies

HONORS and AWARDS

- Awarded by Iranian National Elite Foundation as an Exceptionally Talented Student   2018-2021
- Exam-Free M.Sc. Admission Offer from Sharif University of Technology to Mechanical Engineering Master Program regarding High CGPA and Ranked among Top 3 Students of the Field   2019
- Exam-Free M.Sc. Admission Offer from Amirkabir University of Technology to Mechanical Engineering Master Program regarding High CGPA   2019
- Ranked 2nd among 110 Undergraduate Students of Mechanical Engineering at Amirkabir University of Technology   2018
- Ranked 1st among 140 Interns of Mechanical Engineering at Amirkabir University of Technology   2017
- Rank 191 of the Nationwide University Entrance Exam (Konkoor-e Sarasari) among 181,846 Applicants   2015

SKILLS

- **Computer**
  - Programming: Python, MATLAB, C
  - Python Libraries: PyTorch, OpenCV, Scikit-learn, Stable-Baselines3, Gym
  - Robot Simulator: MuJoCo, Webots, Simulink/MATLAB

- o Mechanical Software: SolidWorks, Ansys, Abaqus, MSC Adams, EES
- o Mechatronic Software: Kinco Builder, Proteus Design Suite
- o General: Microsoft Office, LaTeX
- o Operating System: Windows, Linux
- **Language**
  - o English (Advanced)
    - TOEFL iBT Score: 109 (R:30, L:30, S:23, W:26)   Nov. 2021
  - o Farsi (Native)