Amirreza Razmjoo

Research Assistant, École Polytechnique Fédérale de Lausanne (EPFL)/Idiap Research Institute, Martigny, Switzerland
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RESEARCH INTERESTS

Task Representation, Model Predictive Control, Underactuated and Uncertain Systems, Sampling-based Motion-Planning

EDUCATION

École Polytechnique Fédérale de Lausanne (EPFL),   Jan. 2021 — present
Lausanne, Switzerland
Doctor of Philosophy, EDEE program
Thesis Topic: Enhanced Task Representation for Optimal Control of Underactuated Systems in Uncertain Environments
Supervisor: Dr. Sylvain Calinon

Sharif University of Technology,   Sep. 2018 — Sep. 2020
Tehran, Iran
Master of Science in Mechanical Engineering
GPA: 18.85/20 (4.0/4.0)
Thesis Title: Teaching to point at different objects as an interactive gesture to a robot by learning from demonstration
Supervisors: Prof. Ali Meghdari, Dr. Alireza Taheri

University of Tehran (with honors),   Sep. 2014 — Sep. 2018
Tehran, Iran
Bachelor of Science in Mechanical Engineering
GPA: 18.83/20 (3.95/4.0)
Thesis Title: Development of a Health-Monitoring Device for Activity Recognition and Fall Detection
Supervisors: Dr. Sadighi, Dr. Zakerzadeh

EXPERIENCE

Idiap Research Institute   Martigny, Switzerland
Research Assistant   Jan. 2021 — Present

- Involved in SWITCH project: `https://switch-project.github.io/`
- **Research Keywords:** Optimal Control, Underactuated System, Task Representation

Kavosh Mechanizeh Fanavar   Tehran, Iran
Intern   Jun. 2018 — Sep. 2018

- Designing a pipe inspection robot with CATIA

CAST   Tehran, Iran
Research Assistant   Sep. 2017 — Sep. 2018

- Member of the Dynamic and Control Portfolio

FESTO   Tehran, Iran
Vocational Trainee   Jun. 2017 — Sep. 2017

- Getting familiar with their Hydraulics systems

PROJECTS

Arash 2 & Armin Robots   Tehran, Iran
Research Assistant at CEDRA   Sep. 2018 — Sep. 2020

- Developing a ROS-based control system for the robots

Ahmadi Roshan   Tehran, Iran
Research Assistant   Feb. 2018 — Sep. 2019

- **Research Keywords:** Fall Detection in Videos, Computer Vision, and Image processing

PUBLICATIONS

- T. Xue, A. Razmjoo, and S. Calinon, **D-LGP: Dynamic Logic-Geometric Program for Combined Task and Motion Planning**, 2023, *arXiv preprint arXiv:2312.02731*.

- A. Razmjoo, T., K. Savevska, A. Ude, T. Petrič, and S. Calinon, **Optimal Latent Manifold for Reliable Physical Interaction: A Sit-to-Stand Assistance Application**, 2023, *6th Ergonomic Physical Human-Robot Collaboration: Harnessing Advancements in Robot Learning (IROS 2023 Workshop)*

- Yiming Li, Yan Zhang, Amirreza Razmjoo, and Sylvain Calinon. **Learning Robot Geometry as Distance Fields: Applications to Whole-body Manipulation.**, 2023, *arXiv preprint arXiv:2307.00533*.

- A. Razmjoo, T. Brecelj, K. Savevska, A. Ude, T. Petric, and S. Calinon, **Learning Joint Space Reference Manifold for Reliable Physical Assistance**, 2023, *IROS*.

- B. Ti, A. Razmjoo, Y. Gao, J. Zhao, S. Calinon, **A geometric optimal control approach for imitation and generalization of manipulation skills**, 2023, *Robotics and Autonomous Systems (RAS)*.

- A. Razmjoo, T. S. Lembono, S. Calinon, **Optimal Control Combining Emulation and Imitation to Acquire Physical Assistance Skills**, 2021, *ICAR*.

- A. Razmjoo, S. R. Hosseini, A. Taheri, A. Meghdari, **Can learning from demonstration reproduce natural and understandable movements**, 2020, *ICRoM*.

- A. Razmjoo, A. Sadighi, M. Zakerzadeh, S. Saeedi, **Development of a Health-Monitoring Device for Activity Recognition and Fall Detection**, 2019, *ICRoM*.

AWARDS

Admission Offer   2018
Excellent Student M.Sc. Admission Offer to Sharif University of Technology.

Summa cum laude   2018
Achieved the top rank among 121 students upon graduating from the University of Tehran.

Dean's list   2015-2018
Ranked among the top 10 individuals of the year in that particular program.

F.O.E prize   2015, 2017
Recipient of the award given to the top three students of the year.

The Foundation of the University of Tehran Scholarship   2016-2017

Ranked 256 (top 0.2%)   2014
Among more than 220,000 people in nationwide university entrance exam

SKILLS

- **Programming:** Python, MATLAB, ROS, LaTeX, Linux, C++ (Basics)
- **Softwares:** Pybullet, IsaacGym, Gazebo, Pinocchio, Crocoddyl, Pytorch, OpenCV, CasADi, Stable-Baseline 3 (Basics), CAD (CATIA, Solidworks, AutoCAD)
- **Languages:** Azerbaijani (Native), English (Professional Working Proficiency), Persian (Bilingual)