

Amirreza Razmjoo

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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 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. Brecej, 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 Excellent Student M.Sc. Admission Offer to Sharif University of Technology.	2018
Summa cum laude Achieved the top rank among 121 students upon graduating from the University of Tehran.	2018
Dean's list Ranked among the top 10 individuals of the year in that particular program.	2015-2018
F.O.E prize Recipient of the award given to the top three students of the year.	2015, 2017
The Foundation of the University of Tehran Scholarship	2016-2017

SKILLS

- **Programming:** Python, MATLAB, ROS, L^AT_EX, Linux, C++ (Basics)
- **Libraries:** Pybullet, Gazebo, Pinocchio, Crocoddyl, Pytorch, OpenCV, CasADi, Stable-Baseline 3 (Basics), Openai Gymnasium (Basics)
- **Languages:** Azerbaijani (Native), English (Professional Working Proficiency), Persian (Bilingual)