Filip Marić

15.04.1993, Zagreb, Croatia
+385 98 904 9565
filipmaric@protonmail.com
hr.linkedin.com/in/filipmrc

Work experience

Oct. 2018 - Apr. 2019

Subject matter expert @ **Coursera**

Developing assignments and materials for the Coursera state estimation specialization.

Jul. 2016 – Aug. 2016

R&D intern @ **Institute for Nuclear Technology**

Designing framework for computer vision algorithms used in robot manipulator localization.

Recent Publications

arxiv.org/abs/2011.04850 @ IROS 2020
Inverse Kinematics as Low-rank Euclidean Distance Matrix Completion - video

arxiv.org/abs/1909.09318 @ ICRA 2020
Inverse Kinematics for Serial Kinematic Chains via Sum of Squares Optimization- video

arxiv.org/pdf/2008.08157 @ RA-L & IROS 2020
Heteroscedastic Uncertainty for Robust Generative Latent Dynamics

journals.sagepub/0278364920908922 @ IJJR
The Canadian Planetary Emulation Terrain Energy-Aware Rover Navigation Dataset

arxiv.org/abs/1908.02963 @ IROS 2019
Fast Manipulability Maximization Using Continuous-Time Trajectory Optimization

arxiv.org/abs/1803.06406 @ ICRA 2018
Self-Calibration of Mobile Manipulator Kinematic and Sensor Extrinsic Parameters Through Contact-Based Interaction

10.1109/MIPRO.2016.7522303 @ MIPRO 2016
Robot arm teleoperation via RGBD sensor palm tracking - video

Awards and Achievements

2020 **Best Contribution**
Bosch Centre for AI
Best workshop contribution at the IROS 2020 workshop on Bringing geometric methods to robot learning, optimization and control.

2018 **UofT Joint Educational Placement**
University of Toronto
Fully funded international PhD collaboration with the LAMoR laboratory at the UZagreb.

2017 **Dr. Jasna Šimunić-Hrvoić scholarship**
University of Zagreb
Full financing for working on my Master's thesis at the University of Toronto.

2016 **Rectors award**
University of Zagreb
Awarded for best student scientific thesis.

Education

now **Ph.D candidate, Robotics**
University of Toronto
Space and Terrestrial Autonomous Robotics Systems (STARS) Laboratory

2017 **M.Sc, Electrical Engineering and IT**
University of Zagreb
Laboratory for Autonomous Systems and Mobile Robotics (LAMoR)

2017 **Graduate exchange**
University of Toronto
Institute for Aerospace Studies

2016 **Graduate exchange**
Aalborg Universitat
Department of Electronic Systems

Projects & Other

Thing mobile manipulator
Developing motion planning and control for the Thing mobile manipulator at STARS Laboratory.

Haptic feedback for the DaVinci surgical robot
Developing haptic feedback for minimally invasive surgery with DaVinci surgical robot and Geomagic touch haptic controller.

Kinematic Educational Robot (KER)
Open source, low-cost quadruped platform with ROS and simulation capabilities. Developed from scratch.

Software skills

Experienced	MATLAB, ROS, Simulink, Gazebo
Intermediate	C++, Python, Git, Blender, Linux
Basic	PCL, AutoCAD, ZMQ, emacs

Engineering skills

Experienced	Robotics, Planning, Optimization
Intermediate	Estimation, Control
Basic	Microcontrollers, Machine learning

Language skills

English	Full professional proficiency (TOEFL: 109/120)
French	Elementary proficiency
Croatian	Native speaker

Other experience

Leading and working in large and small international teams

Presenting projects at international conventions, for reporters, investors