



# Spyridon Tarantos

## EDUCATION AND TRAINING

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### Ph.D. Candidate

*Sapienza University of Rome* [ 11/2018 – Current ]

Address: Rome (Italy)

Field(s) of study: Ph.D. Program in Automatic Control, Bioengineering and Operations Research | Curriculum: Automatic Control

### 5-year Diploma (MSc equivalent) in Mechanical Engineering

*National Technical University of Athens (NTUA)* [ 09/2012 – 11/2017 ]

Address: Athens (Greece)

Final grade: 8.58/10.00

Thesis: "Optimal Grasp Points Selection for Cooperative Underwater Vehicle-Manipulator Systems", Supervisor: Prof. Kostas J. Kyriakopoulos, Grade: 10.0/10.0

### Apolytirion (High school diploma)

*1st Lyceum of Corfu* [ 2009 – 2012 ]

Address: Corfu (Greece)

Final grade: 19.7/20.0 (Excellent)

## WORK EXPERIENCE

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### University research assistant

*DIAG Robotics Lab, Sapienza University of Rome (Giuseppe Oriolo Group)* [ 09/2018 – Current ]

City: Rome

Country: Italy

Ph.D. candidate conducting research in the following fields:

- real-time motion generation for mobile manipulators under safety considerations (collision avoidance, robot balance)
- motion generation for mobile robots in the presence of moving obstacles

### University research assistant

*Control Systems Lab, National Technical University of Athens (Kostas Kyriakopoulos Group)* [ 11/2017 – 08/2018 ]

City: Athens

Country: Greece

I conducted research in the field of cooperative grasping for underwater vehicle manipulator systems

### University research assistant

*Control Systems Lab, National Technical University of Athens (Kostas Kyriakopoulos Group)* [ 10/2016 – 11/2017 ]

City: Athens

Country: Greece

I conducted research in the field of cooperative grasping for underwater vehicle manipulator systems as part of my diploma thesis

## TEACHING EXPERIENCE

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**Supervisor for the students project "Planning throwing motions for mobile manipulators" as part of the course "Autonomous and Mobile Robotics"**

[ Current ]

**Supervisor for the students project "Real-time generation of collision-free motions for mobile manipulators" as part of the course "Autonomous and Mobile Robotics"**

[ Current ]

**Supervisor for the students project "Motion planning for mobile manipulators with sampling-based MPC" as part of the course "Autonomous and Mobile Robotics"**

[ 2019 ]

## PUBLICATION LIST

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V. Vulcano, S. G. Tarantos, P. Ferrari, G. Oriolo, "Safe robot navigation in a crowd combining NMPC and control barrier functions", 61st IEEE Conference on Decision and Control (CDC 22), Cancun, Mexico, 2022

S. G. Tarantos, G. Oriolo, "Real-time motion generation for mobile manipulators via NMPC with balance constraints", 30th Mediterranean Conference on Control and Automation (MED 22), Athens, Greece, pp. 853-860, 2022

S. G. Tarantos, G. Oriolo, "A dynamics-aware NMPC method for robot navigation among moving obstacles", 17th International Conference on Intelligent Autonomous Systems (IAS-17), Zagreb, Croatia, 2022

## POSTGRADUATE COURSES/TRAINING

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**PhD course "Model Reduction by Moment Matching for Linear and Nonlinear Systems", SIDRA 2019 PhD Summer School**

[ 07/2019 ]

**PhD course "Intelligent Collaborative Robotics", SIDRA 2019 PhD Summer School**

[ 07/2019 ]

**PhD course "Model Predictive Control", IMT School for Advanced Studies Lucca**

[ 03/2019 - 04/2019 ]

## PROJECTS

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**Design of Hydraulic Motor and Hydraulic Circuit for a Tunnel Boring Machine (TBM)**

[ 2015 ]

Case Study for the Undergraduate Course of *Hydraulic and Pneumatic Systems*

Responsible for the analysis and design of TBM's hydraulic circuit.

**Analysis and Design of a Gearbox for Passenger Vehicle**

[ 2014 ]

Case Study for the Undergraduate Course of *Machine Elements II*

Responsible for the analysis and design of Gearbox's synchronizers.

## SOCIETY MEMBERSHIPS

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**Intelligent Autonomous Systems (IAS) Society**

Technical Chamber of Greece

## HONOURS AND AWARDS

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**Finalist for the best paper award at the 17th International Conference on Intelligent Autonomous Systems (IAS-17) with the work "A dynamics-aware NMPC method for robot navigation among moving obstacles"**

[ 2022 ]

**Winner of the "PhD Scholarship for Foreign Candidates", Sapienza University of Rome**

[ 2018 ]

**Award for the success in the 71st Mathematical Competition "Thales" 2010, Hellenic Mathematical Society**

[ 2010 ]

## LANGUAGE SKILLS

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Mother tongue(s): **Greek**

**Other language(s):**

**English**

LISTENING C2 READING C2 WRITING C2

SPOKEN PRODUCTION C2 SPOKEN INTERACTION C2

**French**

LISTENING B2 READING B2 WRITING B2

SPOKEN PRODUCTION B2 SPOKEN INTERACTION B2

**Italian**

LISTENING A2 READING A2 WRITING A2

SPOKEN PRODUCTION A2 SPOKEN INTERACTION A2

## DIGITAL SKILLS

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**Programming Languages**

MATLAB / Fortran / R / Python / C/C++

**Operating Systems**

Windows / Ubuntu / ROS

**Modeling and Simulation Software**

Simulink/Simscape / CoppeliaSim

**Mechanical Design and Simulation Software**

SolidWorks / Ansys / LS-DYNA

**Numerical Optimization and Optimal Control Tools**

ACADO Toolkit / acados / CasADi / Optimization Toolbox (MATLAB)

**Text Editing and Office Suite**

LaTeX / Microsoft Excel / Microsoft Word / Microsoft Powerpoint

## **HOBBIES AND INTERESTS**

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tennis

swimming

skiing

piano

photography

## **OTHER PARTICIPATIONS**

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**European Youth Parliament, Ionian International Forum**

[ 08/2012 ]

Participated as a delegate

**Euroscola**

[ 04/2011 ]

Member of the Greek team and a member of the winning team of "Eurogame"