

# Dr. Christos K. Verginis

Last updated: February, 2023

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Ångströmlaboratoriet

Lägerhyddsvägen 1

Uppsala, 752 37

Sweden

## Professional Appointments

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2022 – on **Assistant Professor**

Department of Electrical Engineering

Division of Signals and Systems

Uppsala University, Sweden

2020 – 2022 **Postdoctoral Researcher**

Oden Institute for Computational Engineering and Sciences

University of Texas at Austin, USA

Collaborator: Assoc. Prof. Ufuk Topcu

## Education

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2015 – 2020 **PhD in Electrical Engineering**, KTH Royal Institute of Technology, Sweden

Dissertation title: “*Planning and Control of Uncertain Cooperative Mobile Manipulator-Endowed Systems under Temporal Logic Tasks*”

Advisor: Prof. Dimos Dimarogonas

Co-advisor: Prof. Danica Kragic

2019 **Research visit**, Rice University, Houston, Texas, USA

Collaborator: Prof. Lydia Kavraki

2013 – 2015 **MSc in Automation Systems and Robotics**, National Technical University of Athens, Greece

Master Thesis: “*Distributed Control Protocols for Vehicular Platoons*”

Advisor: Prof. Kostas Kyriakopoulos

2007 – 2013 **MEng in Electrical and Computer Engineering**, National Technical University of Athens, Greece

Diploma Thesis: “*Distributed Control Protocols for Vehicular Platoons*”

Advisor: Prof. Costas Tzafestas

2012 – 2013 **Research visit**, Technical University of Munich, Germany

Collaborator: Prof. Martin Buss

## Awards & Honors

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- 2020 European Embedded Control Institute Award for the **Best PhD Thesis** in Control for Complex and Heterogeneous Systems of 2020
- 2020 Finalist for the George Giralt Award for the **Best PhD Thesis** in Robotics of 2020

## Grants

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- 2023 CIM Project “Robot planning and control subject to stochastic temporal tasks” , Centre for Interdisciplinary Mathematics (CIM), Uppsala University.
- 2019 Travel grant for the IEEE International Conference on Robotics and Automation (ICRA), 2019. Knut och Alice Wallenbergs Foundation.

## Other Research Projects

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- 2020 – 2021 **“Verifiable, Control-Oriented Learning On The Fly”**: Air Force Office of Scientific Research, Multidisciplinary University Research Initiative, USA (2019-2022). *Team member* (Postdoctoral researcher), carrying out research on data-driven control and reinforcement learning.
- 2017 – 2020 **“Co4Robots: Achieving Complex Collaborative Missions via Decentralized Control and Coordination of Interacting Robots”**, EU Horizon 2020. *Team member* (PhD student) co-coordinating project’s activities and carrying out research on multi-robot systems.
- 2015 – 2020 **IPSYS**, Knut and Alice Wallenberg foundation. *Team member* (PhD student), carrying out research on cooperative robotic manipulation.
- 2015 – 2017 **“AEROWORKS: Collaborative Aerial Robotic Workers”**, EU Horizon 2020. *Team member* (PhD student) carrying out research on multi-robot systems.

## Academic Service

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### Associate Editor

- 2023 Associate Editor, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Detroit, Michigan, USA, 2023.
- 2022 – on Associate Editor in Multi-Agent Control, *Frontiers in Control Engineering*
- 2020 – 2021 Guest Associate Editor in Robotic Control Systems, *Frontiers in Robotics and AI*

### Chair

- 2017 IEEE International Conference on Robotics and Automation (ICRA), session chair
- 2022 – on IEEE European Control Conference, Stockholm, Sweden, 2024, publications’ co-chair.

### Reviewer

- IEEE Transactions on Robotics
- IEEE Transactions on Automatic Control

- IEEE Transactions on Control Systems Technology
- IEEE Transactions on Control of Network Systems
- IEEE Transactions on Intelligent Transportation Systems
- IEEE Robotics and Automation Letters
- IEEE Control Systems Letters
- IEEE Transactions on Automation Systems Engineering
- IEEE Transactions on Industrial Electronics
- IEEE Transactions on Cybernetics
- IEEE Transactions on Neural Networks and Learning Systems
- Autonomous Robots
- Robotics and Autonomous Systems
- Automatica

## Teaching

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### PhD

Fall 2022      **Networked and Multi-Agent Control Systems** (7.5 ects)  
Teaching module on Cooperative Robotic Manipulation: creation and teaching of one 2-hour lecture.  
*KTH Royal Institute of Technology*

### Master's

Spring 2023    **Digital Communication** (10 ects)  
Teaching assistant: teaching of tutorials.  
*Uppsala University*

Fall 2022      **Introduction to Robotics: Mechanics and Control** (5 ects)  
Teaching module on Adaptive Control: creation and teaching of one 2-hour lecture.  
*Uppsala University*

Spring 2017    **Hybrid and Embedded Control Systems** (7.5 ects)  
Spring 2018    Teaching assistant: creation and teaching of tutorials, creation and correction of  
Spring 2019    homework assignment and exams, responsible for robotics laboratory experiments.  
*KTH Royal Institute of Technology*

### Undergraduate

Fall 2022      **Automatic Control for Electrical Engineers** (5 ects)  
Course responsible: creation and teaching of lectures and exercise sessions, creation and correction of exams.  
*Uppsala University*

Fall 2016      **Automatic Control, General Course** (6 ects)  
Teaching Assistant: creation and teaching of exercise sessions, creation and correction of exams, responsible for robotics laboratory experiments.  
*KTH Royal Institute of Technology*

## Secondary Education

2008 – 2015 I have been tutoring High School and Senior High School students in the courses of Mathematics, Geometry, Physics, Chemistry and Computer Programming.

## Supervision

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### PhD (co-advisor)

2020 – on **Mayank Sewlia**  
KTH Royal Institute of Technology, Sweden.  
Advisor: Dimos Dimarogonas

2020 – on **Dzenan Lapandic**  
KTH Royal Institute of Technology, Sweden.  
Advisor: Bo Wahlberg

### Master's

2020 Akash Singh, “**Platoon Coordination under Signal Temporal Logic Specifications**”, KTH Royal Institute of Technology, Sweden.

2019 Cristina Escribano, “**Leader-Follower Decentralized Control of a Nanoquadrotor Swarm**”, KTH Royal Institute of Technology, Sweden.

2019 Nicola Lissandrini, “**Non-linear Model Predictive Control for Aerial-Ground Cooperative Robotics**”, KTH Royal Institute of Technology, Sweden.

2018 Yu Wang, “**Cooperative Transportation of Mobile Manipulators With Collision Avoidance**”, KTH Royal Institute of Technology, Sweden.

2017 Imran Khan, “**Decentralized Navigation of Multiple Quad-rotors using Model Predictive Control**”, KTH Royal Institute of Technology, Sweden.

2017 Matteo Mastellaro, “**Cooperative Manipulation without force/torque feedback: Control Design and Experiments**”, KTH Royal Institute of Technology, Sweden.

2016 Ziwei Xu, “**LTL Motion Planning with Collision Avoidance for A Team of Quadrotors**”, KTH Royal Institute of Technology, Sweden.

### Undergraduate

2019 Joakim Brisen and Joan Correa Silva, “**Motion Planning and Control of Unmanned Aerial Vehicles**”, KTH Royal Institute of Technology, Sweden.

2018 Vilhelm Dinevik and Paula Carbó, “**Motion Planning and Control of Unmanned Aerial Vehicles**”, KTH Royal Institute of Technology, Sweden.

2017 Johan Hedin and Idris Sahil, “**Dynamic Motion Control of a Team of Quadrotor Aircraft Using the Potential Field Method**”, KTH Royal Institute of Technology, Sweden.

2016 Daniel Kastensson Fan, “**Cost-Benefit Models for Platooning**”, KTH Royal Institute of Technology, Sweden.

## Thesis Subject Reviewer

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- 2022 – on Niklas Kavathatzopoulos, “**Data-driven methods for estimating and forecasting algal blooms using autonomous underwater vehicles**”, Uppsala University, Sweden.
- 2023 – on Hassan Soltani, “**Design, analysis and applications of fractional proportional-integrative-derivative controller**”, Uppsala University, Sweden.

## Presentations

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### Invited

- 2022 **K. Verginis, C.** “Scalable and Verifiable Coordination of Adaptable Autonomous Systems”, *European Embedded Control Institute (EECI): General Assembly and Annual Seminar*, Online.

### Other Presentations

- 2022 **K. Verginis, C.** “Nonlinear and Adaptive Control and Applications to the Department of Electrical Engineering”, Uppsala University.

## Other Professional Experience

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- 2011 – 2012 **Translator**  
Publisher “G. Fountas”  
Athens, Sweden  
Participation in the translation from English to Greek of the scientific books:
- B. Ciciliano, L. Sciavicco, L. Villani, and G. Oriolo, “*Robotics: Modeling, Planning and Control*”, London, U.K.: Springer-Verlag, 2010.
  - A. V. Oppenheim, R. W. Schaffer “*Discrete-Time Signal Processing*”, Pearson Education India, 1999.

## Leadership and Managerial Activities

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- 2023 – on Co-organizer of departmental presentations and meetings at the Department of Electrical Engineering, Uppsala University.
- 2022 – on Co-organizer of internal group meetings at the Division of Signals and Systems, Uppsala University.
- 2016 – 2018 Co-organizer of reading group on Hybrid Systems at the Division of Decision and Control, KTH Royal Institute of Technology.

## Leadership and Academic Training

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- 2016 PhD course “Basic Communication and Teaching”, 3 ECTS, KTH Royal Institute of Technology

2020	Work environment training <ul style="list-style-type: none"><li>• "The IX Basics 2020-2021"</li><li>• "Compliance &amp; Ethics Program"</li><li>• "Equal Employment Opportunity"</li><li>• "Information Security Awareness"</li><li>• "Sexual Misconduct Prevention"</li><li>• "Staying Healthy in a Changing Environment"</li></ul>
2019	Participation in a work-environment interactive workshop on discrimination, sexual harassment, and degrading treatment, KTH Royal Institute of Technology
2016	PhD course "The sustainable scientist", 2 ECTS, KTH Royal Institute of Technology
2016	PhD course "Scientific writing", 2 ECTS, KTH Royal Institute of Technology
2017	PhD course "Theory and Methodology of Science", 3 ECTS, KTH Royal Institute of Technology

## Languages

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Greek	Native
English	Fluent (Proficiency)
German	Basic Knowledge (B2)
Swedish	Basic Knowledge (B2)
Spanish	Basic Knowledge (B2)