

# Mario Coppola

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## SKILLS

### Scientific

Artificial intelligence • Robotics • Machine learning • State estimation • Sensor fusion

### Programming

Python • C++ • C • MatLab

### Languages

English (Native) • Italian (Native) • Dutch (Intermediate) • Spanish (Intermediate)

## EDUCATION

### PhD ROBOTICS AND AI

DELFT UNIVERSITY OF TECHNOLOGY

2016-2020 | Delft, Netherlands

Thesis: *Automatic design of verifiable robot swarms.*

### MSc AEROSPACE ENGINEERING

DELFT UNIVERSITY OF TECHNOLOGY

2013-2016 | Delft, Netherlands

Honors student, specialized in Control and Simulation. Thesis: *On-board relative localization for collision avoidance in micro air vehicle teams.*

### EXCHANGE MINOR ROBOTICS

NANYANG TECHNOLOGICAL UNIVERSITY

Fall semester 2012 | Singapore

Focus on robotics and embedded systems.

### BSc AEROSPACE ENGINEERING

DELFT UNIVERSITY OF TECHNOLOGY

2010-2013 | Delft, Netherlands

Thesis: *Design of a controllable system for the guided atmosphere-assisted deceleration of a human-rated precursor vehicle to Mars.*

Supervised by NASA Langley Research Center.

### INTERNATIONAL BACCALAUREATE

INTERNATIONAL SCHOOL EINDHOVEN

2008-2010 | Eindhoven, Netherlands

## ADDITIONAL ACTIVITIES

- |      |   |
|------|---|
| 2019 | TU Delft PhD council representative                                       |
| 2019 | Multi-Robot Systems Summer School at Czech Technical University, Prague   |
| 2018 | Lecturer at BEST Summer School  |
| 2017 | International Graduate Summer School in Aeronautics at Beihang University |

## WORK EXPERIENCE

### PhD CANDIDATE | DELFT UNIVERSITY OF TECHNOLOGY

Sep. 2016 – Current | Delft, Netherlands

- Expected completion date: September 2020.
- Research topic: **Automatic design of verifiable robot swarms**, with joint supervision by the Micro Air Vehicle Laboratory (MAVLab) and the Space Systems Engineering group.

Over the course of the PhD, I have developed:

- Novel **machine learning** solutions to automatically design, optimize, and verify the behavior of distributed robotic systems with limited on-board sensors.
- Distributed intelligence algorithms** that enable teams of “simple” robots to self-organize and achieve collective goals.
- Novel **on-board relative localization technologies** that enable several tiny drones to localize each other when flying together.

### RESEARCHER (INTERN) | MAX PLANCK INSTITUTE

Feb. 2015 – Jun. 2015 | Tübingen, Germany

- Intern within the Autonomous Robotics and Human-Machine Systems group at the Institute for Biological Cybernetics.
- I developed a **reinforcement learning** scheme to teach drones how to perform efficient evasive maneuvers.

### R&D SCIENTIST (INTERN) | HONEYWELL

Jul. 2014 – Dec. 2015 | Brno, Czech Republic

- Project 1: **Software developer** for next generation flight-decks featuring multi-modal pilot interaction.
- Project 2: Review of the benefits and limitations of COTS model-based design tools for flight software development.
- From Feb. 2015 to Dec. 2015: remote part-time consultant helping to prepare proposals for Clean Sky 2.

### TEACHING ASSISTANT | DELFT UNIVERSITY OF TECHNOLOGY

Aug. 2013 – Jul. 2014, Aug. 2015 – Jan. 2016 | Delft, Netherlands

- Taught classes, supervised, and/or graded Aerospace Engineering BSc students for various courses.

## SELECTED AWARDS

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| 2017 | System Design award at the 2017 International Micro Air Vehicle (IMAV) competition and conference                                  |
| 2017 | Excellent Student award at the International Graduate Summer School in Aeronautics and Astronautics of Beihang University, Beijing |
| 2014 | Third place at BestGraduates International Competition (judged by Shell, Philips, ASML, TNO, DSM, Fugro, and Friesland Campina)    |