

Mario Coppola

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SKILLS

Scientific

Artificial intelligence • Machine learning •
Robotics • Autonomous systems • Sensor fusion

Programming

Python • C++ • C • MatLab

Languages

English (Native) • Italian (Native) •
Dutch (Advanced) • 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

Honours 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

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| 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 and Astronautics at Beihang University, Beijing |

WORK EXPERIENCE

PhD CANDIDATE | DELFT UNIVERSITY OF TECHNOLOGY

Sep. 2016 – Sep. 2020 | Delft, Netherlands

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

Key innovative developments:

- A novel **machine learning** framework to automatically design, optimize, and verify the behaviour of distributed robotic systems with limited on-board sensors.
- Intelligent algorithms that enable teams of robots to self-organize and achieve collective goals.
- A novel **on-board state estimation technology** that allow several tiny drones to localize each other and fly in tight areas.

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 manoeuvres in crowded areas.

R&D SCIENTIST (INTERN) | HONEYWELL

Jul. 2014 – Jan. 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 I continued as a remote part-time consultant aiding with the preparation of R&D proposals.

TEACHING ASSISTANT | DELFT UNIVERSITY OF TECHNOLOGY

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

- Assisted with teaching classes, supervising, and grading for various BSc Aerospace Engineering 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 (assessment panel by ASML, Shell, Philips, TNO, DSM, Fugro, and Friesland Campina) |
| 2010 | Award for Outstanding Contribution to the International School Community from International School Eindhoven |