Mario Coppola

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SKILLS

Scientific
Artificial intelligence • Robotics • Drones • Machine learning • State estimation • 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

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.

Key innovative scientific developments:

- Novel **machine learning** solutions to automatically design, optimize, and verify the behavior of distributed robotic systems with limited on-board sensors.
- **Artificial intelligence algorithms** that enable teams of robots to self-organize and achieve collective goals.
- Novel **on-board relative localization techniques** 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.
- Outcome: 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 aiding with the preparation of R&D proposals.

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

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 **Shell, Philips, ASML, TNO, DSM, Fugro, and Friesland Campina**)