

# Agata Barciś

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## experience

- 04.2021 – now **Technology Innovation Institute** Abu Dhabi, United Arab Emirates  
*Senior Researcher*
- Swarm behaviors of fixed-wing drones: Led a team of 4 people developing PoCs and integration with client's platforms. The main focus of the group was on synchronization and formation control with minimal communication.
  - Autopilot-agnostic interface for drones (vehicle\_gateway): Proposed and supervised a project executed with Open Robotics (Intrinsic). The developed solution was successfully used in multiple internal projects.
  - Self-organized chain formation of nano-drones: Developed and tested a solution for subterranean exploration.
- 10.2017 – 07.2021 **University of Klagenfurt** Klagenfurt, Austria  
*Senior Scientist*
- Worked in a doctoral school (Karl Popper Kolleg) on a project focused on creating a 3D model of an unknown environment with a fleet of UAVs. Specifically, focused on coupling of synchronization with swarming and applying the theory of *sync and swarm* in multi-robot systems. Additionally to performing research in this domain, I was involved in the preparation of multiple live demonstrations for the general public.
- 12.2016 – 09.2017 **Telic AG** Wrocław, Poland  
*Embedded software developer*
- Part of a company specializing in IoT and M2M solutions. Responsible for embedded software development in C and projects based on embedded Linux.
- 06.2016 – 07.2017 **The Continuum Student Research Group** Wrocław, Poland  
*Control engineer*
- Member of the team that created *Aleph 1* Mars rover at the University of Wrocław. Responsible mainly for the design and implementation of control algorithms for the manipulator. The biggest achievement: the 2nd place in the University Rover Challenge 2017 – international Mars rover competition.

## languages

**Polish** mother tongue  
**English** fluent  
**German** intermediate

## programming

Python  
C  
C++

## technologies

ROS 2  
ROS  
PX4  
git  
Linux  
embedded Linux  
Jira

## publications

Google Scholar profile

## robotic projects

Youtube playlist

## interests

traveling  
hiking  
logic puzzles

## education

- 2017 – 2021 **PhD in Robotics** University of Klagenfurt, Austria  
Thesis: *Synchronizing and Swarming Robots: Spatio-Temporal Coordination in Multi-Robot Systems*; Supervisor: *Prof. Christian Bettstetter*
- 2015 – 2016 **MEng in Control Engineering and Robotics** Wrocław University of Science and Technology, Poland  
Specialization in **Embedded Robotics**  
Thesis: *Data processing and analysis from flight data recorder*
- 2012 – 2016 **BEng in Computer Science** Wrocław University of Science and Technology, Poland  
Specialization in **Applied Computer Engineering in Medicine**  
Thesis: *Computer application for diagnosis of melanocytic skin lesions*
- 2011 – 2015 **BEng in Control Engineering and Robotics** Wrocław University of Science and Technology, Poland  
Specialization in **Robotics**  
Thesis: *Flight parameters measurement sensor system for the airplane*

## awards

- 2023 **Digitalisierungsstipendium** Carinthia, Austria  
Award for the best dissertations in Carinthia on the topic related to digitalization.
- 2022 **1st place in IMAV 2022: Nanocopter AI challenge** IMAV 2022, Delft, The Netherlands  
Nanodrone challenge organized during IMAV 2022 conference.
- 2021 **1st place in Deep Drone Challenge: Dronebot track** DDC 2020, Ingolstadt, Germany  
Drone competition organized by brigkAIR and Airbus.
- 2019 **Best paper award** SASO 2019, Umeå, Sweden  
13th IEEE International Conference on Self-Adaptive and Self-Organizing Systems.
- 2017 **2nd place in University Rover Challenge** Utah, USA  
International Mars rover competition.
- 2015 **5th place in Top10, Wrocław University of Science and Technology** Wrocław, Poland  
The contest for the best graduates of the Faculty of Electronics.