

Martin Braquet

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EDUCATION

M.Sc. Aerospace Engineering, The University of Texas at Austin	May 2022
M.Sc. Electromechanical Engineering, Université catholique de Louvain, Belgium	June 2020
B.Sc. Engineering, Université catholique de Louvain, Belgium	June 2018

ACADEMIC APPOINTMENTS

Graduate Research Assistant , The University of Texas at Austin	2020 – 2022
Graduate Teaching Assistant , The University of Texas at Austin	2021 – 2022
Graduate Teaching Assistant , Université catholique de Louvain	2018 – 2020

RESEARCH EXPERIENCE

Graduate Research Assistant, The University of Texas at Austin 2020 – 2022

Advisor: Efstathios Bakolas

- Designed an auction-based dynamic decentralized decision-making algorithm (task allocation) for multi-agent systems
- Designed a vector field-based collision avoidance algorithm for multi-agent systems with uncertain moving obstacles and bounded control input

Visiting Student, Massachusetts Institute of Technology July – August 2019

Department of Aeronautics and Astronautics

Advisor: Richard Linares

- Built the electronics of a laboratory hardware test-bed for proximity operations that emulates NASA's Astrobebe free-flying robot on the International Space Station
- Made an avionics diagram, ordered the electronic components, soldered the PCBs and tested the development boards and sensors

RESEARCH FUNDING

Individual Research Fellowships

Graduate Fellowship for a Complementary Master's Degree in the U.S.A. 2020 - 2021

Belgian American Educational Foundation

- \$60.000 award over 1 year

Cockrell School of Engineering Fellowship

2020 - 2021

The University of Texas at Austin

- \$3.500 award over 1 year

Full Tuition Merit Scholarship for a Research Internship at MIT

2019

International Lhoist Berghmans Innovation Chair (with Belgium Seed Fund)

- €5.000 awarded to 5 students with the highest grades

TEACHING EXPERIENCE

Graduate Teaching Assistant, The University of Texas at Austin

2022

Linear Systems Analysis

Handled office hours, designed and graded homework / exams for a class of 40 students.

Graduate Teaching Assistant, Université catholique de Louvain

2018 – 2020

Electricity and Electromagnetism, Thermodynamics, Numerical Methods, Waves and Quantum Mechanics, Project in Electricity

Gave exercise sessions to classes of 20-50 students.

PUBLICATIONS

Papers

Braquet, M. and Bakolas E. (2022), Vector Field-based Collision Avoidance for Moving Obstacles with Time-Varying Shape. Modeling, Estimation and Control Conference (MECC).

<https://www.sciencedirect.com/science/article/pii/S2405896322028890>.

Braquet, M. and Bakolas E. (2021), Greedy Decentralized Auction-based Task Allocation for Multi-Agent Systems. Modeling, Estimation and Control Conference (MECC).

<https://www.sciencedirect.com/science/article/pii/S240589632102293X>.

Theses

Braquet, M. (2022). Decentralized Auction-based Task Allocation with Guaranteed Collision Avoidance in Dynamic Environments. The University of Texas at Austin.

<https://repositories.lib.utexas.edu/items/f6cf4ae2-6fed-4993-8023-f853f08d72c4>.

Braquet, M. (2020). Design of an ultra-low-power energy-harvesting audio sensor for ecosystem monitoring. Université catholique de Louvain.

<https://dial.uclouvain.be/memoire/ucl/object/thesis:25100>.

HONORS & AWARDS

Vice champion of Belgium at the robotics contest Robotix's, Louvain-la-Neuve 2019
Finalist of the Belgian Mathematical Olympiad, Brussels 2015

PROFESSIONAL EXPERIENCE

Quantitative Developer, Arbol July 2022 – June 2024
Software and Electronic Engineer, LSM Conseil, Louvain-La-Neuve March 2020 – July 2020