

# PROFILE

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# Titouan BELIER

Autonomous Underwater Robotics Ph.D Student



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0009-0006-6220-1563



## 2ND YEAR PHD STUDENT | GUARANTEES FOR AUTONOMOUS UNDERWATER VEHICLE DOCKING

## HOBBIES

- Video game development (Unity)
- Running
- 3D modeling

## LANGUAGES

- English:  Proficient (reading, writing, speaking)  
TOEIC: 915/990
- Spanish:  Intermediate (B1)

## TECHNICAL SKILLS

- Programming: Python, C++, ROS2
- Navigation, Guidance and Control theory
- Inertial theory
- Kalman & particular filter
- Intervals and set guarantees
- SolidWorks, CATIA V5, Arduino, Simulink

## OTHER

- Driver's license
- First Aid Certification (PSC1)

Specialized in Autonomous Robotics, with a strong background in navigation, guidance and control theory, Kalman filtering, vision, and networks. Experienced in AUV, ROV, and USV operations, including 3D docking with visual guidance and USBL, hybrid aerial–underwater robot design, and autonomous ASV navigation.

## PROFESSIONAL EXPERIENCE

2025 – 2028 | Ph.D thesis | Lab-STICC, ENSTA | Brest, France

- Inter-AUV docking control (acoustics & vision, terminal phase)
- Path planning: T. Belier et al., ICRA 2026
- Control: L. Degorre & al. 2025, Robotics and Mechatronics Symposia 2025,
- Current work: performance guarantees Hands-on with AUV, ROV & USV

2023 – 2024 | Apprenticeship | Thales Defence Mission Systems | Brest, France

- Developed data management software for an EW radar (ElasticSearch, Python)
- Trained in Electronic Warfare concepts & operational challenges
- Expertise transferable to robotics research: large-scale data handling, sensor integration

May – July 2023 | Engineering Internship | ETS de Ingeniería Industrial | Málaga, Spain

- Multi-sensor calibration: LiDAR, thermal cameras, and stereo cameras.
- Designed the system model using SolidWorks.
- Developed ROS2 packages in Python and C++.

Jan. 2022 | Technician Internship | LabSTICC | Brest, France

## EDUCATION

2024 | Master's Degree in Robotics Research | University of Angers, France

- Autonomous robotics, control theory, inverse kinematics,
- Introduction to research methodologies.

2021 – 2024 | General Engineering Degree | ENSTA Bretagne, Brest, France

- Autonomous Robotics (navigation, guidance, control, Kalman filtering, vision, networks)
- Projects: ROV 3D docking with visual guidance & USBL,
- Projects: cave exploration robots (team leader, 35 students).
- Projects: design of a hybrid aerial–underwater robot (semester-long project).
- Field week: autonomous navigation of an ASV with GNSS coordinates.

Jan. – Apr. 2023 | Academic Exchange | Dalhousie University | Halifax, Canada

- Relevant coursework: Cybersecurity, Digital Media, Virtual and Augmented reality.
- Completed a full semester in an English-speaking academic environment.

2018 – 2021 | Preparatory Classes for the French Grandes Écoles (CPGE) | Vannes, France

## EXTRACURRICULAR ACTIVITIES

2021 – 2022 | President of IMPACT | ENSTA Bretagne Junior Enterprise

- Managed a team of 17 members.
- Recruited and trained a new team of 21 members.
- Developed strong interpersonal, organizational, and leadership skills.

2021 – 2022 | Treasurer | Robotics Club, ENSTA Bretagne

- Managed the club's finances and prepared a funding application,
- Gained hands-on experience with new hardware and systems.