

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.