Loan BERNAT

ENGINEER IN ROBOTICS AND INTERACTIVE SYSTEMS PHD STUDENT IN ROBOTICS



With a strong background in research and development, I am currently pursuing an industrial PhD in collaboration with Siléane and LAAS-CNRS, focusing on using foundational language and vision models in robotics.

Professional Experiences

PhD Student in Robotics

sept 2024 - today

 Creation of an autonomous method to generate trajectory using vision and language for industrial manipulator robots.

Research Engineer Intern

Siléane - Saint-Etienne, France fev 2024 - août 2024

- Development and integration of my own solution for data augmentation to train a classification network using generative models: Diffusion models and Large Reconstruction models.
- Conducted an in-depth study of the scientific state of the art in generative models.

Chercheur stagiaire



Human Centered Robotics Lab - Wolfenbüttel, Allemagne

avril 2023 - août 2023





- Development of a no-code interface to allow Master students to command a Sawyer Robot.
- Creation of a bartender application for the Sawyer using my interface and driven by vision.

Education

Master's Degree in Robotics and Interactive Systems Engineering

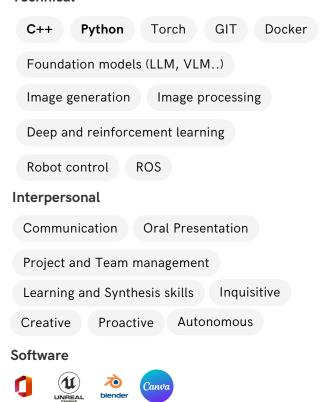
⊕ UPSSITECH - Toulouse, France
2024

High School Diploma in Engineering Sciences

St Joseph LaSalle - Toulouse, France 2018

Skills

Technical



Languages

French Native

English TOEIC 915/990 - Professional

Scientific project

Evaluation of the Use of a Surround View System for Autonomous Navigation

© Continental Engineering Service - Toulouse, France sept 2023 - fev 2024



Study into the possibility of a robot navigating in a factory using vision alone to move a crate

- Product Owner of the project: Communication with clients and management of a team of 17 engineers.
- Supervision and technical support for HMI and VISION teams.

Conception of a hight-fidelity simulation environment and 3D modelisation of a crawler robot





Enable Agreenculture to simulate its tracked agricultural robot in fields by accurately modeling the interaction between the tracks and the ground with the highest possible fidelity.

- Responsible for the creation and implementation of a 3D model of the robot using Blender and Unreal Engine 5, including the modeling of physical constraints.
- Co-author of a state-of-the-art review on the interaction between soil and tracks.

Publications

<Not yet>

Interest

Handball Since 2014. Highest level reached: N1 (3rd division) at Fenix Toulouse Handball

Game devlopment Implementation of new AI system for non-player character

Community Engagements

Handball Coaching of young goalkeeper at Fenix Toulouse Handball

President of student association 1 year experience. Management of 40 volunteers

Event organisation Sportive tournament, Gala Evening and Diploma Ceremony 2024