XAVIER BOU HERNANDEZ

PhD Candidate in Computer Vision @ Centre Borelli, ENS Paris-Saclay

Third year PhD student working on Change Detection (CD) in video and satellite imagery. I am interested in self-supervised learning and leveraging large pre-trained models to understand image semantics and geometry.

PERSONAL

Address: 2 Rue des Fusillés
94270 Le Kremlin-Bicêtre, France.
Phone: +34 685 284 061
Email: xavibouhae@gmail.com
Github: https://github.com/xavibou
Google Scholar: link

SOFTWARE

Prog. Languages: Python, Java, C, C++
Frameworks: Numpy, Pytorch, JAX, OpenCV, rasterio, Anaconda
Other: Jupyter Notebooks, Git, Linux, SSH

LANGUAGES

Catalan
Fluent

Spanish
Fluent

English
Fluent

French
Advanced

WORKING EXPERIENCE

Oct 2022 - Present

PHD CANDIDATE IN COMPUTER VISION

Centre Borelli, ENS Paris-Saclay   **Orsay, France**

PhD in applied mathematics at Centre Borelli (ex CMLA), École Normale Supérieure Paris-Saclay. My work explores change detection in video and satellite imagery. Funded by Agence de l'innovation de défense - Ministère des Armées.

Feb 2022 - Oct 2022

RESEARCH INTERN

Research internship at the Centre Borelli (ex CMLA), École Normale Supérieure Paris-Saclay. I worked on change detection methods in video within the Image team.

Sept 2021 - Feb 2022

STUDENT RESEARCHER

Mobile Perception Systems Lab at TU/e   **Eindhoven, Netherlands**

Research conducted at the Mobile Perception Systems (MPS) Lab at TU/e on Deep Learning methods for Domain Generalisation for Semantic Segmentation in Autonomous Driving.

April 2021 - August 2021

DATA SCIENTIST

Kayrros   **Paris, France**

Internship position within the Remote Sensing Team where I researched Deep Learning models for Thin Cloud Detection and Removal on Satellite Imagery.

July 2018 - August 2020

SOFTWARE ENGINEER

Mobile Knowledge   **Barcelona, Spain**

Design, develop and manage Wireless Communications Software projects for engineering companies and organisations such as NXP Semiconductors.

EDUCATION

Sept 2020 - June 2022

Master of Science in Artificial Intelligence

Université Paris-Saclay   **Paris, France**

Sept 2020 - June 2022

Master of Science in Data Science and Artificial Intelligence

Eindhoven University of Technology   **Eindhoven, Netherlands**

Sept 2015 - June 2018

BSc in Electrical Engineering

Drexel University   **Philadelphia, United States**

Division 1 Athlete at Men's Soccer Team

PUBLICATIONS

[1] Bou, X., Facciolo, G., Von Gioi, R. G., Morel, J. M., & Ehret, T. (2024). Exploring Robust Features for Few-Shot Object Detection in Satellite Imagery. In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (pp. 430-439).

[2] X. Bou, T. Ehret, R. G. Von Gioi and J. Anger. (2024). Portraying the Need for Temporal Data in Flood Detection Via Sentinel-1. In Proceedings of the IEEE International Geoscience and Remote Sensing Symposium (pp. 3930-3934).

[3] Bou, X., Ehret, T., Facciolo, G., Morel, J. M., & von Gioi, R. G. (2022). Reviewing ViBe, a popular background subtraction algorithm for real-time applications. Image Processing On Line, 12, 527-549.

[4] Bou, X. (2022). A Study of RobustNet, a Domain Generalization Method for Semantic Segmentation. Image Processing On Line, 12, 469-479.