

Thomas GUILMENT

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Postdoctoral Researcher

Experience

- May 2023 - Now **Postdoctoral in AI applied to seafloor mapping**, *Postdoctoral researcher - Physics Department - University of Louisiana at Lafayette, LA, USA.*
Active underwater acoustics, AI, Deep Learning, Machine learning in Python
- June 2020 – December 2021 **Postdoctoral in signal processing on the WHOI-Keck Real Time 3-D Acoustic Telescope project**, *Postdoctoral investigator - Applied Ocean Physics and Engineering - Woods Hole Oceanographic Institution, MA, USA.*
Passive acoustic data analysis, **detection, classification, machine learning** and localization
Scientist during the telescope deployment cruises with the R/V Neils Armstrong
Programming language used: **MATLAB, Python, Arduino, C++**
- October 2018 – June 2020 **Postdoctoral in signal processing on passive acoustic data from the Gulf of Mexico**, *Postdoctoral Research Associate - Physics Department in the University of Louisiana at Lafayette, LA, USA.*
Lead scientist for a scientific cruise in the Gulf of Mexico on the R/V Pelican
Passive acoustic data analysis, density estimation, modelling, **detection and classification, machine learning**
Programming language used: **MATLAB**
- April 2015 – April 2018 **Baleen whale calls classification in seismic environment**, *PhD student - LabSTICC; IMT Atlantique; Bretagne-Loire University and Sercel company, Brest.*
Signal processing on passive acoustic data, **dictionary learning, automatic classification, sparse representation, machine learning**
Programming language used: **MATLAB**
Software used: Microsoft suite, LaTeX

Education

- 2015 – 2018 **Doctor of philosophy (PhD) in signal and image processing for industrial and bioacoustic applications**, *IMT Atlantique www.imt-atlantique.fr (formerly known as Telecom Bretagne and SERCEL company www.sercel.com), Brest.*
- 2011–2014 **Master degree in signal and image processing**, *University of Science, Orléans-La-Source.*
- 2006–2011 **Bachelor's degree: Mathematics and Physics**, *University of Science, Orléans-La-Source.*

Computer skills

MATLAB	Advanced	LateX	Advanced
Python/GPU	Intermediate	Bash/Batch	Basic
C/C++	Basic	Arduino	Basic

Peer review papers

- March 2021 Li, Kun, Sidorovskaia, Natalia, **Guilment, Thomas**, Tang, Tingting, "Decadal assessment of the sperm whale abundance trends in the northern Gulf of Mexico using passive acoustic data", *Journal of Marine Science and Engineering*, published the 20th of April 2021
- April 2020 **Guilment, Thomas**, Sidorovskaia, N. and Li, K., "Modelling the acoustic repertoire of Cuvier's beaked whale clicks", accepted by *The Journal of the Acoustical Society of America special issue: The effect of noise on aquatic life*, April 2020
- September 2018 **Guilment, Thomas**, Socheleau, F.-X., Pastor, D. and Vallez, S., "Sparse Representation-Based Classification of Mysticete Calls", accepted by *The Journal of the Acoustical Society of America*, September 2018

Scientific activities

- January to June 2021 Participation to **5 cruises in North Atlantic** (duration between 6 and 10 days) on the **R/V Neils Armstrong** to help with **3D acoustic telescope software**, **sensors programming**, **sonar data acquisition** and **CTD** during engineering test cruise
- Nov 6 to 10, 2019 **Lead scientist**, photograph and author of the "Proceedings of the HDR 2019 Gulf of Mexico Experiment" on the R/V Pelican in the Gulf of Mexico
- 2016 – 2017 **Head of PhD students** (Organizer of the PhD presentations days, knowledge sharing session)

Teaching

- 64 hours Supervised work/exercise class on **Statistics, Probability, Image and signal processing**, *IMT Atlantique; Bretagne-Loire University*, Brest, France.
- 4 months **Supervision** of an end-of-studies project on **artificial neural networks** applied to **baleen whale calls recognition**

Languages

French	Native speaker	English	Advanced
Spanish	Intermediate	Portuguese	Beginner

Interests

- Music **Diploma of musical study** with a **First prize** in **saxophone** (in 2009) and in **piano** (in 2010) at the Orléans Music Conservatory, France
- Sport Badminton, volleyball and basketball at an amateur level
- Chess and board games For pleasure