Clea Parcerisas

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Education

Master's in Industrial Engineering   2016–2018
Specialized in Automatics, Control and Robotics
Universitat Politècnica de Catalunya (UPC), Barcelona (Spain)

- *Master Thesis*: An ocean sound map along the track of a journey around the globe - Underwater soundscapes of the Great Coral Reef.
  Laboratori d'Aplicacions Bioacustiques (LAB) (Spain)

Bachelor's in Industrial Engineering   2012–2016
Universitat Politècnica de Catalunya (UPC), Barcelona (Spain)
First quartile of the promotion

Professional Music Degree   2008 - 2014
Conservatori Municipal de Música de Barcelona, Barcelona (Spain)
Instrument: classical saxophone

Work Experience

Post-doctoral researcher in Underwater Acoustics   2024 – Present
Flanders Marine Institute (VLIZ) (Belgium)

- Developing open-source tools for soundscape analysis

PhD in Underwater Acoustics   2019 – 2024
Flanders Marine Institute (VLIZ) and Ghent University (UGent) (Belgium)

- Thesis: Marine Soundscapes in Shallow Water: Automated Tools for Characterization and Analysis

Research assistant   2018 – 2019
Acoustics' Group, imec (Belgium)

- Developing acoustic lenses to diffract acoustic waves and obtain a desired 3D pressure distribution (acoustic holograms).

Research assistant   2016 – 2017
Perception and Manipulation Lab at Instituto de Robótica Industrial (IRI) (Spain)

- Developing a C++ code for a project of energy efficiency and AI in elevators

Music and saxophone teacher   2014 – 2018
Public school CEIP Nabí (Spain)

- Teaching saxophone and music theory, both individual and group classes.

Publications and Conferences

Journal Articles

J1. Calonge, A., Parcerisas, C., Schall, E. & Debusschere, E. Revised Clusters of Annotated Unknown Sounds in the Belgian Part of the North Sea. *Frontiers in Remote Sensing* **5.** ISSN: 2673-6187. https://www.frontiersin.org/articles/10.3389/frsen.2024.1384562 (2024) (June 4, 2024).

J2. Parcerisas, C., Schall, E., family=Velde given=Kees, p. u., Botteldooren, D., Devos, P. & Debusschere, E. Machine Learning for Efficient Segregation and Labeling of Potential Biological Sounds in Long-Term Underwater Recordings. *Frontiers in Remote Sensing* **5.** ISSN: 2673-6187. https://www.frontiersin.org/articles/10.3389/frsen.2024.1390687 (2024) (Apr. 25, 2024).

J3. Schall, E., Kaya, I. I., Debusschere, E., Devos, P. & Parcerisas, C. Deep Learning in Marine Bioacoustics: A Benchmark for Baleen Whale Detection. *Remote Sensing in Ecology and Conservation.* ISSN: 2056-3485. https://onlinelibrary.wiley.com/doi/abs/10.1002/rse2.392 (2024) (Apr. 2024).

J4. Schmidlin, S., Parcerisas, C., Hubert, J., Watson, M. S., Mees, J., Botteldooren, D., Devos, P., Debusschere, E. & Hablützel, P. I. Comparison of the Effects of Reef and Anthropogenic Soundscapes on Oyster Larvae Settlement. *Scientific Reports* **14,** 12580. ISSN: 2045-2322. https://doi.org/10.1038/s41598-024-63322-2 (2024) (May 31, 2024).

J5. Parcerisas, C., Roca, I. T., Botteldooren, D., Devos, P. & Debusschere, E. Categorizing Shallow Marine Soundscapes Using Explained Clusters. *Journal of Marine Science and Engineering* **11,** 550. ISSN: 2077-1312. https://www.mdpi.com/2077-1312/11/3/550 (2023) (3 Mar. 2023).

J6. Rubbens, P. *et al.* Machine Learning in Marine Ecology: An Overview of Techniques and Applications. *ICES Journal of Marine Science,* fsad100. ISSN: 1054-3139. https://doi.org/10.1093/icesjms/fsad100 (2023) (Aug. 3, 2023).

J7. Schall, E. & Parcerisas, C. A Robust Method to Automatically Detect Fin Whale Acoustic Presence in Large and Diverse Passive Acoustic Datasets. *Journal of Marine Science and Engineering* **10,** 1831. ISSN: 2077-1312. https://www.mdpi.com/2077-1312/10/12/1831 (2023) (12 Dec. 2022).

J8. Rey Baquero, M. P., Parcerisas, C., Seger, K., Perazio, C., Botero Acosta, N., Mesa, F., Acosta, A. L., Botteldooren, D. & Debusschere, E. Comparison of Two Soundscapes: An Opportunity to Assess the Dominance of Biophony Versus Anthropophony. *Oceanography,* 62–65. ISSN: 10428275. https://tos.org/oceanography/article/comparison-of-two-soundscapes-an-opportunity-to-assess-the-dominance-of-biophony-versus-anthropophony (2023) (Dec. 1, 2021).

In prep.

W1. Calonge, A., Develter, R., Parcerisas, C., Muñiz, C., Reubens, J., Boone, W., Deneudt, K. & Debusschere, E. *Multipurpose Seabed Moorings: Enabling Sustained Long-Term, Continuous Observations in Shallow Waters (in Prep.)* pre-published.

W2. Wall, C. *et al. A Collaborative Framework for Comparative Analysis of Diverse Marine Passive Acoustic Monitoring Data* pre-published.

Peer-reviewed Conference Proceedings

C1. Parcerisas, C., Botteldooren, D., Devos, P. & Debusschere, E. *CLUSTERING, CATEGORIZING, AND MAPPING OF SHALLOW COASTAL WATER SOUNDSCAPES* in *Proceedings of the 10th Convention of the European Acoustics Association Forum Acusticum 2023* Forum Acusticum (Torino, Italy, Sept. 2023).

C2. Parcerisas, C., Botteldooren, D., Devos, P., Hamard, Q. & Debusschere, E. *Studying the Soundscape of Shallow and Heavy Used Marine Areas: Belgian Part of the North Sea* in *The Effects of Noise on Aquatic Life* (eds Popper, A. N., Sisneros, J., Hawkins, A. D. & Thomsen, F.) (Springer International Publishing, Cham, 2023), 1–27. ISBN: 978-3-031-10417-6. https://link.springer.com/10.1007/978-3-031-10417-6_122-1 (2023).

C3. Gao, H., Gijsenbergh, P., Halbach, A., Serrahima, C. P., Brondani Torri, G., Jeong, Y., Billen, M., Cheyns, D., Haouari, R., Rottenberg, X. & Rochus, V. *Design of Polymer-Based PMUT Array for Multi-Frequency Ultrasound Imaging* in *2019 IEEE International Ultrasonics Symposium (IUS)* 2019 IEEE International Ultrasonics Symposium (IUS) (Oct. 2019), 1092–1095.

Posters and Presentations

P1. Parcerisas, C., Kaya, I. I., Devos, P., Debusschere, E. & Schall, E. *A New Deep Learning Model Evaluated on the Antarctic Benchmark for Baleen Whale Calls* DCLDERotterdam. June 2024. https://www.dclde2024.com.

P2. Parcerisas, C., Schall, E., Botteldooren, D., Devos, P. & Debusschere, E. *Detecting and Clustering Unknown Sound Events Using Transfer Learning for Marine Soundscape Analysis* ICUABath. June 2024. https://icua2024.org/.

P3. Parcerisas, C., Kaya, I. I., Botteldooren, D., Devos, P., Debusschere, E. & Schall, E. *Using CNN Classifiers as Underwater Sound Source Detectors: Learning about Noise.* OCEANOISEVilanova i la Geltru, Spain. May 2023. https://2023.oceanoise.com/.

Datasets

D1. Parcerisas, C., Schall, E., Aubach, family=Velde given=Kees, p. u., Slabbekoorn, H. & Debusschere, E. *Acoustic Salient Event Annotations* 2024. https://www.vliz.be/en/imis?module=dataset&dasid=8543.

D2. Parcerisas, C., Schall, E., Calonge, A. & Debusschere, E. *Annotated Unknown Underwater Sounds in the Belgian Part of the North Sea* 2024. https://www.vliz.be/en/imis?module=dataset&dasid=8520.

D3. Schmidlin, S., Parcerisas, C., Watson, M. S., Hablützel, P. I. & Debusschere, E. *Sound Playback Files for Oyster Magallana Gigas Settlement Experiment* 2024. https://www.vliz.be/en/imis?module=dataset&dasid=8596.

D4. Parcerisas, C., Botteldooren, D., Devos, P. & Debusschere, E. *Broadband Acoustic Network Dataset* 2021. https://www.vliz.be/en/imis?module=dataset&dasid=7879 (2022).

Reports

R1. Boebel, O., Allerholt, J., Engicht, C., Hoppema, M., Llanillo, P., Parcerisas, C., Pinner, O., Roca, I. T., Spiesecke, S. & Tippenhauer, S. *2.1. Physical Oceanography, in: Hoppema, M. The Expedition PS129 of the Research Vessel POLARSTERN to the Weddell Sea in 2022. Berichte Zur Polar- Und Meeresforschung = Reports on Polar and Marine Research* (Alfred Wegener Institute), 18–52. https://epic.awi.de/id/eprint/57797/.

R2. Spiesecke, S., Parcerisas, C., Roca, I. T., Boebel, O., Burkhardt, E., Thomisch, K. & Van Opzeeland, I. *2.2. Ocean Acoustics, in: Hoppema, M. The Expedition PS129 of the Research Vessel POLARSTERN to the Weddell Sea in 2022. Berichte Zur Polar- Und Meeresforschung = Reports on Polar and Marine Research* (Alfred Wegener Institute), 18–52. https://epic.awi.de/id/eprint/57797/.

DEVELOPED SOFTWARE

S1. Parcerisas, C. *Lifewatch/Pyhydrophone: Process Hydrophone Data in Standarized and Easy Way* Zenodo, Jan. 31, 2023. https://zenodo.org/record/7588428 (2023).

S2. Parcerisas, C. *Lifewatch/Pypam: Pypam, a Package to Process Bioacoustic Data* Zenodo, Feb. 11, 2022. https://zenodo.org/record/6044593 (2022).

S3. Parcerisas, C. *Lifewatch/Bpnsdata: First Release of Bpnsdata* Zenodo, Nov. 3, 2021. https://zenodo.org/record/5642499 (2021).

S4. Parcerisas, C. *Lifewatch/Pyporcc: A Python Package to Detect and Classify Porpoise Clicks* Zenodo, Aug. 11, 2021. https://zenodo.org/record/5179943 (2021).

Academic Supervision

- January 2022 to June 2022: 6 months Master internship Quentin Hamard: The eacoacoustics of the BPNS - International Master of Bioacoustics

- April 2023 to July 2023: 4 months internship Simon Laurent: Develop tools to help understand/process/classify sounds measured in an underwater environment - Master Grenoble INP Phelma

- September 2024: 1 month visiting PhD researcher Svenja Wohle: separating Blue whale D calls from 40Hz Fin whale calls - Alfred Wegener Institute

GRANTS

FWO outgoing mobility   January – July 2022
PhD research stay at the Ocean Acoustics group from Alfred Wegener Institute (Germany)

EXPEDITIONS AND FIELD WORK

LifeWatch cruises: Simon Stevin   September 2019 – Present
1 to 5 days coastal trips to deploy and maintain the LifeWatch broadband acoustic network (https://www.lifewat acoustic-network)

PS129: Polarstern   March – April 2022
Antarctic Expedition to maintain the Alfred Wegener Institute acoustic observatory (HAFOS)

COMPUTER SKILLS

Programming languages: High: Python, Matlab. Medium: C, PHP, R, C++, javascript
Engineering Software: Ansys, COMSOL, SolidWorks, AutoCAD, Inkscape
PAM Software: PAMGuard, MANTA, Raven Pro (and other multiple open-source ones)
Version control: git

PERSONAL SKILLS

Languages: Native Catalan and Spanish, English (C1), French (B2), Dutch (B2)

EXTRA CURRICULAR

Team Play Football Player at the highest regional category in Spain from 2008 to 2016
Honors and awards Awarded with an honor mention for the scores obtained to access university from CaixaCatalunya.

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Last updated: October 12, 2024