



Yann Bayle

- 31 years old
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- <https://yannbayle.fr>
- yann.bayle@reef-pulse.com
- French citizenship
- A & B driving licence

Links

- LinkedIn
- Github
- Google Scholar
- Researchgate
- Orcid

Languages

- French Native speaker
- English IELTS 7/9
TOEIC 920/990
- German CECL B1

Hobbies

Diving 🐠

- Scuba diving Level 2 FFESSM
- Nitrox Level 1 FFESSM
- Freediving Level 1 PADI Freediver

Music 🎵

- Guitar (16 years)
- Didgeridoo (5 years)
- Cajón (2 years)
- Flute (10 years)

Audio Data Scientist

🔧 Experience

- 2022 – today **CTO and co-founder** Reef Pulse S.A.S.
PhD in AI applied to audio signal processing.
Tasks Setup of a Cloud and On Premises data processing and visualisation infrastructure for big audio data coming from long-term hydrophones recording of coral reefs of three oceans. Responsible for the Machine Learning pipeline. Manager of a team of engineers, technicians, interns, and a PhD student. Scientific monitoring.
Tools Python 3.9, git, Github Actions CI/CD, VSCodium, Zotero 6, Notion, *Extreme Programming*.
- 2018 – 2022 **Data Scientist** Orosys S.A.S. – Two notes Audio Engineering
PhD in AI applied to music signal processing.
Tasks Scientific monitoring. Software and firmware development in deep learning, neural network, and digital signal processing. Manager of a team of interns and a PhD student.
Tools Python 3.6 & 3.10, C++14 & 20, git, dvc, TeamCity, LaTeX, Anechoic chamber.
- 2015 – 2018 **PhD in AI applied to music classification** LaBRI, CNRS
PhD student in Machine Learning and Digital Signal Processing applied to Big Musical Data. PhD funded by the French Ministry.
Tasks Creation, maintenance, and analysis of big musical data in partnership with Deezer, Simbals, and Recisio. National and International publications, among which one with honourable mention from the IEEE.
Tools Python 3.5, C99, git, LaTeX.
- 2015 **Intern in psychoacoustics** INCIA, CNRS
5-month internship as an engineer student at the Cognitive and Integrative Neuroscience Institute in Bordeaux.
Tasks Definition and implementation of an experiment to test a dozen of human listeners leading to a scientific publication.
Tools Matlab R2014a, Anechoic chamber.
- 2012 **Intern in digital signal processing** Feeltune S.A.S.
Intern in a startup of 5 people based in Nîmes, France.
Tasks Development of a realtime capable sound synthesiser using additive synthesis and MIDI controls.
Tools C++11, Qt 4.6.

🎓 Education

- 2015 – 2018 **PhD in Computer Science** LaBRI, CNRS
Diploma delivered by the Bordeaux Laboratory of Research in Computer Science from the National Center for Scientific Research for the thesis entitled “Machine learning algorithms applied to audio features analysis: application in the automatic generation of thematic musical playlists”. Advisors: Matthias Robine and Pierre Hanna.
- 2012 – 2015 **Master’s Degree in Telecommunications Engineering** ENSEIRB-MATMECA
Diploma for the engineer degree in Telecommunications from the *École Nationale Supérieure* funded in 1920 and specialised in Electrical Engineering, Electronics, Computer Science, Telecommunications, Mechanical Engineering, and Mathematics in Bordeaux, France. Graduation with high honors. Rank: 3/78.
- 2010 – 2012 **Technical degree in Electronics** I.U.T. de Montpellier
Diploma for the degree of Computer Science and Electrical Technician from the Technical University of Montpellier, France. Graduation with high honors. Rank: 2/80.
- 2007 – 2010 **A-level in Sciences** La Réunion
French High School Diploma in Math and Physics. Graduation with highest honor.

Publications

- 2022 **Neural Network-based Virtual Analog Modelling**
T. Vanhatalo, P. Legrand, M. Desainte-Catherine, P. Hanna, A. Brusco, G. Pille, Y. Bayle.
Applied Sciences, 12(12).
- 2022 **A Review of Neural Network-Based Emulation of Guitar Amplifiers**
T. Vanhatalo, P. Legrand, M. Desainte-Catherine, P. Hanna, A. Brusco, G. Pille, Y. Bayle.
Artificial Evolution Conference, Exeter (United Kingdom).
- 2022 **Hide and seek shark teeth in Random Forests: Machine learning applied to *Scyliorhinus canicula***
F. Berio, Y. Bayle*, D. Baum, N. Goudemand & M. Debiais-Thibaud.*
PeerJ, 2022(10).
- 2022 **3D models related to the publication: Hide and seek shark teeth in Random Forests: Machine learning applied to *Scyliorhinus canicula***
F. Berio, Y. Bayle, S. Agret, D. Baum, N. Goudemand & M. Debiais-Thibaud.
MorphoMuseum
- 2021 **Phenotypic regionalization of the vertebral column in the thorny skate *Amblyraja radiata*: stability and variation**
F. Berio, Y. Bayle, C. Riley, O. Larouche & R. Cloutier
Journal of Anatomy, 240(2): 253-267.
- 2020 **Scyland3D: Processing 3D landmarks**
F. Berio & Y. Bayle
Journal of Open Science Software, 5(46): 1262.
- 2018 **KaraMIR: A Project for Cover Song Identification and Singing Voice Analysis Using a Karaoke Songs Dataset**
L. Maršík, P. Martišek, J. Pokorný, M. Rusek, K. Slaninová, J. Martinovič & Y. Bayle
International Journal of Semantic Computing, 12(04): 501-522.
- 2018 **Toward faultless content-based playlists generation for instrumentals**
Y. Bayle, M. Robine & P. Hanna
arXiv:1706.07613
- 2018 **SATIN: A persistent musical database for music information retrieval and a supporting deep learning experiment on song instrumental classification**
Y. Bayle, M. Robine & P. Hanna
Springer Multimedia Tools and Applications, 78: 2703-2718.
- 2017 **Detecting temporal changes in acoustic scenes: The variable benefit of selective attention**
L. Demany, Y. Bayle, E. Puginier & C. Semal
Hearing Research, 353: 17-25.
- 2017 **Kara1k: A karaoke dataset for cover song identification and singing voice analysis**
Y. Bayle, L. Maršík, M. Rusek, M. Robine, P. Hanna, K. Slaninová, J. Martinovic & J. Pokorný
Proceedings of the 19th IEEE International Symposium on Multimedia Content-Based Multimedia Indexing, 177-184.
- 2017 **SATIN: A persistent musical database for music information retrieval**
Y. Bayle, P. Hanna & M. Robine
Proceedings of the 15th International Workshop on Content-Based Multimedia Indexing
- 2016 **Classification à grande échelle de morceaux de musique en fonction de la présence de chant**
Y. Bayle, P. Hanna & M. Robine
Actes des 10^{èmes} Journées d'Informatique Musicale

Scientific talks

- 2022 **Introduction to Machine Learning applied to biology**
Vienna, Austria
- 2017 **Invitation to the 2nd International Workshop On “Horses” in Applied Machine Learning**
London, United Kingdom
- 2017 **15th International Workshop on Content-Based Multimedia Indexing (CBMI)**
Florence, Italy
- 2016 **Work group on “Sound and interactions”**
Bordeaux, France
- 2016 **10th National Computer-based Music Days**
Albi, France