

PROFESSIONAL EXPERIENCE

- **Post doc**, Institut des Matériaux Jean Rouxel de Nantes Nantes, France 03/2025 –Present
Post doc in the MADNESS project. The goal is to identify unknown phases from DRX of high temperature molten salt. Development of analysis procedure and Neural Networks for phase identification.
Topics: A.I., Data analysis, Crystallography
- **Software developer**, Origyne Nantes, France 2017 –2018
Topics: Development and design of internal tools for a white label telecom provider.
- **Apprentice Software developer**, Clever Cloud Nantes, France 01/2015 –09/2016
Topics: Development of software in the R&D center of an IT automation platform

EDUCATION

Ph.D studies in subatomic physics , Nantes University - SUBATECH with Dr. Yermia Frederic and Dr. Viaud Benoit	Nantes, France 09/2021 –12/2024
<u>Title of doctoral thesis:</u> “Deep learning methods and Dual Calorimetric analysis for high precision neutrino oscillation measurements at JUNO”	
Master RPS , Nantes University Subatomic Physics.	Nantes, France 09/2019 –09/2021
Physics Licence , Nantes University Subatomic Physics.	Nantes, France 09/2016 –09/2019
Software development school , IMIE Software development	Nantes, France 09/2014 –09/2016
High school diploma , Lycée Livet Science, Technology and Industry of Sustainable development	Nates, France 2014

SCHOLARSHIPS

- Ph.D scholarship from Centre National de Recherche Scientifique (CNRS). 2021–2024
- Ph.D scholarship from Region Pays de la Loire. 2021–2024

RESEARCH INTERESTS

Machine learning for reconstruction and classification of physics phenomenae

Reliability of machine learning

Comparison and combination of machine learning methods with classical methods

Precision physics, data analysis, computational physics

ORAL COMMUNICATIONS

- “Utilisation d’approche machine learning pour l’analyse DRX” 10/2025
IA + Hydrogen conference (talk), Paris, France
- “Design, implementation and reliability of machine learning algorithms in JUNO” 08/2023
Neutrino Physics and Machine Learning 2023 (talk), Boston, USA

PUBLICATIONS

- [1] P. Walker et al., “The high voltage splitter board for the JUNO SPMT system”, *Nucl. Instrum. Meth. A*, vol. 1082, p. 171 022, 2026. arXiv: 2505.05586 [physics.ins-det].
- [2] A. Abusleme et al., “JUNO sensitivity to invisible decay modes of neutrons”, *Eur. Phys. J. C*, vol. 85, no. 1, p. 5, 2025. arXiv: 2405.17792 [hep-ex].
- [3] A. Abusleme et al., “Potential to identify neutrino mass ordering with reactor antineutrinos at JUNO”, *Chin. Phys. C*, vol. 49, no. 3, p. 033 104, 2025. arXiv: 2405.18008 [hep-ex].
- [4] A. Abusleme et al., “Prediction of Energy Resolution in the JUNO Experiment”, *Chin. Phys. C*, vol. 49, no. 1, p. 013 003, 2025. arXiv: 2405.17860 [hep-ex].
- [5] T. Adam et al., “Simulation of the background from $^{13}\text{C}(\alpha, n)^{16}\text{O}$ reaction in the JUNO scintillator”, *Eur. Phys. J. C*, vol. 85, no. 9, p. 1080, 2025. arXiv: 2503.00968 [physics.ins-det].
- [6] J. Xu et al., “Instrumentation of JUNO 3-inch PMTs”, Oct. 2025. arXiv: 2510.06616 [physics.ins-det].
- [7] A. Abusleme et al., “Real-time monitoring for the next core-collapse supernova in JUNO”, *JCAP*, vol. 01, p. 057, 2024. arXiv: 2309.07109 [hep-ex].
- [8] A. Cabrera et al., “Multi-calorimetry in light-based neutrino detectors”, *JHEP*, vol. 12, p. 002, 2024. arXiv: 2312.12991 [hep-ex].
- [9] L. Imbert, “Deep learning methods and Dual Calorimetric analysis for high precision neutrino oscillation measurements at JUNO”, Ph.D. dissertation, Nantes Université, 2024.
- [10] A. Abusleme et al., “JUNO sensitivity to ^7Be , pep, and CNO solar neutrinos”, *JCAP*, vol. 10, p. 022, 2023. arXiv: 2303.03910 [hep-ex].

TRAININGS AND SCHOOLS

- Ecole de Gif 2022: La Physique des Neutrinos 09/22
Paris, France

TEACHING

- **Teaching assistant** at Nantes Université 2025-2026
Machine Learning methods for Materials Master Student
- **“Bias and Data Poisoning: Or how a neural network is lazy and will always go with the easiest solution”** Doctorate school workshop in Nantes 2025
Python, Tensorflow, Data analysis, Dense Neural Network for Phd students
- **Teaching Assistant** at IMT-Atlantique 2021-2022
C++, Monte-Carlo and Geant 4 simulations for Engineering.

COMPUTER SKILLS

- **Languages :** C++, Python, Rust, Scala, Javascript, Typescript, LaTeX.
- **Softwares :** Slack, Git, Overleaf, Google suit, MicrosoftWord suit.

LANGUAGES

- **French :** native
- **English :** fluent

EXTRACURRICULAR ACTIVITIES

- 2022 Science Festival of Nantes 2022
Presentations to non-specialists adults and children about subatomic physics
- 2022 “Nuit blanche des Chercheurs” Nantes 2022
Presentations to non-specialists adults and children about subatomic physics