

CURRICULUM VITAE

David Mascarenhas

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Current Position (February 2024 - Present)

Jeune docteur at Capgemini Engineering, Blagnac, Occitanie, France

- **Viable** : Development of Auralization tool for the eVTOL flight simulation.
- **TREE** : Noise modelling of source and propagation for wind turbine noise. To be used for noise mapping in smart power grids.
- **Optimind** : Development of Room Acoustic simulator for the perception of studied smart materials.

Academic Qualifications

2020-2023	<p>PhD in Acoustics Defended on 14th December 2022 Institute of Mechanical Sciences and Industrial Applications (IMSI), ENSTA Paris, CNRS, CEA, EDF, Institut Polytechnique de Paris, France</p> <p>Thesis titled 'Physics-based synthesis of wind turbine noise' within the project "VRACE– Virtual Reality Audio for Cyber Environments". Awarded the Marie Skłodowska-Curie Actions Innovative Training Network (ITN) for the funding of the project.</p>
2016 – 2018	<p>M.Sc. in Physics Specialization: Acoustics, Electronic Instrumentation Department of Physics, Nowrosjee Wadia College, Pune, India. Under Savitribai Phule Pune University (S.P.P.U). Syllabus included theoretical, laboratory work.</p> <p>Main topics: Acoustics, Electronic Instrumentation, Classical Mechanics, Mathematical Physics, Nuclear Physics, Statistical Mechanics, Quantum Mechanics, Computational Physics</p>
2013 – 2016	<p>B.Sc. in Physics Specialization: Electro-Acoustics, Materials Science Department of Physics, Nowrosjee Wadia College, Pune, India. Under Savitribai Phule Pune University (S.P.P.U)</p>

Other Research Experience

Feb 2023 – May 2023	Post Doctorate ENSTA Paris (with Benjamin Cotté) The study of tonal noise produced by wind turbines was carried out based on NREL data. The synthesized data was used to test the perceptual impact of the tonal noise.
June 2021 – August 2021	Research Student: Secondment CEREMA, Strasbourg (with David Ecotiere, Benoit Gauvreau) As part of the secondment, the analysis of meteorological and wind turbine noise data was done. The extensive database of the PIBE project was scrutinized to obtain significant results.
June 2019 – Dec 2019	Research Student: Internship Electro-Acoustics Lab, Department of Physics, Nowrosjee Wadia College, Pune (with Dr. Farhat Surve) I studied the acoustic properties of annealed glass and toughened glass. Using the studied acoustical properties, I was able to differentiate the two types.
April 2019 – May 2019	Interned as a Volunteer Wildlife Conservation Society-India and Forest Department (with Nikit Surve) The team and I set up camera traps to observe and study leopard (<i>Panthera pardus</i>) movement and behaviour in the Sanjay Gandhi National Park, Mumbai.
Jan 2018 – April 2019	Research Student: Internship Interdisciplinary School of Scientific Computing (ISSC), Pune (with Dr. Vaishali Shah) I studied the optical and electronic properties of a photocatalyst which was simulated on the computer. The effect of the dopants on the photocatalyst were studied.
Nov 2017 – Mar 2018	MSc thesis titled ' <i>Wavelet and Spectral Analysis of Whale Sounds Assisting Classification and Behavioral Studies</i> ' Electro-Acoustics Lab, Department of Physics, Nowrosjee Wadia College, Pune (with Dr. Farhat Surve) I studied the sounds produced by Baleen Whales and developed a model for their classification based on the characteristic acoustical signals they produce.
Dec 2015 – Mar 2016	BSc thesis titled ' <i>Vibrational Characteristics of Bars</i> ' Electro-Acoustics Lab, Department of Physics, Nowrosjee Wadia College, Pune (with Dr. Farhat Surve) I studied the frequency dependent decay of Kaddapa to determine the decay rate and to provide ready reckoners for engineers. The material dependent production of sub-harmonics was also investigated.

Conferences and symposiums

October 2022	24th International Congress on Acoustics, ICA 2022 Gyeongju, Korea
September 2022	4th Vienna Talk 2022 on Music Acoustics at MDW - University of Music and Performing Arts Vienna, Austria
August 2022	51st International Congress and Exposition on Noise Control Engineering InterNoise 2022 Glasgow, Scotland
March 2022	48th Annual Conference On Acoustics, DAGA 2022 Stuttgart, Germany
December 2018	63 rd DAE Solid State Physics Symposium 2018 by BARC, BRNS, DAE, Gov of India Haryana, India
November 2018	13 th Western Pacific Acoustic Conference, WESPAC 2018 by CSIR-NPL and Acoustical Society of India (ASI) New Delhi, India
February 2018	DAE, C.V.Raman lecture by Indian Physics Association (Pune Chapter) Pune, India
July 2017	Life In The Universe, The 2nd International Astrobiology Conference by IARC Surat, India
December 2017	UNITES 2017 by IARC, Center for united Nations Events & Conference on Earth & Space Nagpur, India
January 2015, January 2016, February 2017	Frontiers in Physics VIII, IX, X, National seminar by AstroClub Fergusson College, IUCAA, INAAD, Department of Biotechnology, STAR college scheme (Gov. Of India) Pune, India

Peer review journals articles

- **‘Synthesis of wind turbine trailing edge noise in free field’**
JASA-Express Letters, Published Online: 3 March 2022
Authors: David Mascarenhas, Benjamin Cotté, Olivier Doaré
- **‘Propagation effects in the synthesis of wind turbine noise’**
Acta Acustica: VRACE special issue, Under minor revisions: 10 March 2023
Authors: David Mascarenhas, Benjamin Cotté, Olivier Doaré
- **‘Validity of the effective sound speed approximation in parabolic equation models for wind turbine noise propagation’**
JASA, Published Online: 20 March 2023
Authors: Bill Kayser, David Mascarenhas, Benjamin Cotté, David Ecotière, Benoit Gauvreau

Conference papers

- **‘Auralization of Wind Turbine Noise Using Physics-Based Emission and Propagation Models’**
24th International Congress on Acoustics ICA
October 2022 Gyeongju, KOREA
Authors: David Mascarenhas, Benjamin Cotté, Olivier Doaré
- **‘Wind turbine noise modeling including aeroacoustic sources and propagation effects: Comparison against field measurements’**
InterNoise 2022
August 2022 Glasgow, SCOTLAND
Authors: David Mascarenhas, Benjamin Cotté, Olivier Doaré, David Ecotière, Gwenaél Guillaume, Benoit Gauvreau, Isabelle Schmich-Yamane, Fabrice Junker
- **‘Physics-based auralization of wind turbine noise’**
9th International Conference on Wind Turbine Noise
May 2021, Remote from Europe
Authors: David Mascarenhas, Benjamin Cotté, Olivier Doaré
- **‘A Comparative Study of Optical Properties of Site Specific Doping in GaNbO₄’**
63rd DAE Solid State Physics Symposium. Proceedings online in the American Institute of Physics (AIP) as AIP Conference Proceedings.
December 2018 Haryana, INDIA
Authors: David Mascarenhas, Vaishali Shah
- **‘Wavelet and Spectral Analysis of Whale Sounds Assisting Classification and Behavioral Studies’**
13th Western Pacific Acoustic Conference, WESPAC. Proceedings in the POMA-ASA Journal.
November 2018 New Delhi, INDIA
Authors: David Mascarenhas, Farhart Surve

Computational Skills

- MatLab, Python, C/C++
- MAX/ MSP
- Raven Pro 1.5, 2.0 (Beta)
- Vienna Ab initio Simulation Package (VASP)
- Gnuplot, XCrysden
- LaTeX, Word, Excel, PowerPoint
- Google Tools: Docs, Sheets, Forms, Keep
- OS used: Windows 10, Linux- Ubuntu 14.0, Ubuntu 16.0

Languages

English	Native language
French	Limited working proficiency
Hindi	Professional working proficiency
Marathi	Professional working proficiency

Contact References

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