

Christos Plachouras

AI researcher, focused on improving audio perception in large models

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EDUCATION

Queen Mary University of London, Centre for Digital Music (C4DM) London, UK
PhD in Artificial Intelligence and Music 09/2023 - (09/2027)
Thesis: Audio-language models and representations – Advisors: Emmanouil Benetos, Johan Pauwels

Universitat Pompeu Fabra, Music Technology Group (MTG) Barcelona, Spain
MSc in Sound and Music Computing – Grade: 9.37/10.00 09/2021 - 08/2023
Thesis: mir_ref: A music audio representation evaluation framework – Advisors: Dmitry Bogdanov, Pablo Alonso

New York University Global Program
BSc in Computer Science, double major in Music – GPA: 3.61/4.00 08/2017 - 05/2021
Thesis: Audio-based hierarchical music structure analysis – Advisor: Carlos Guedes

EXPERIENCE

Earth Species Project Remote (London, UK)
Research Intern 11/2025 - 05/2026

- Engineer the next generations of NatureLM, the state-of-the-art audio-language model for bioacoustics.
- Develop and maintain packages for data synthesis and expert evaluation of audio-language models.

Utopia Music Berlin, Germany
Data Scientist (R&D) 10/2022 - 07/2023

- Led the formation of an R&D team for massive-scale broadcast monitoring (20m tracks, 20k TV & radio stations)
- Developed efficient deep learning models for granular, large-scale music and sample fingerprinting
- Built tools for generating synthetic broadcasts and extensively evaluating audio fingerprinting systems

Audiostack Barcelona, Spain
R&D Engineer 01/2022 - 07/2022

- Developed a system for remixing music recordings to any duration by utilizing their hierarchical structure
- Built an automatic mixing system and plugins for real-time programmatic sound design
- Devised a Speech Synthesis Markup Language (SSML) unification system for cross-provider speech synthesis

Music and Sound Cultures Research Lab, NYU Abu Dhabi Abu Dhabi, UAE
Research Assistant – Advisors: Carlos Guedes, Kaustuv Kanti Ganguli 05/2018 - 07/2021

- Created visualizations, content-based indexing, searching, and thumbnailing for large music collections
- Worked on music transcription from audio for mode identification and tuning estimation

Center for Data Science, NYU New York, USA
Research Student – Advisor: Brian McFee 09/2019 - 05/2020

- Built methods for hierarchically decomposing music structure from audio
- Developed structure similarity metrics for cover song identification and sound event detection

SKILLS

- **ML Workflow:** Python (PyTorch, Keras), tracking (wandb, MLflow), config (Hydra), versioning (git, av, DVC)
- **Other Programming** (*Intermediate*): C/C++ (incl. JUCE), MATLAB, JavaScript, HTML, CSS, SQL
- **Infrastructure** (*Intermediate*): AWS, GCP, Docker, CI/CD (CircleCI, GitHub actions), Linux SysAdmin
- **Multimedia:** Max, SuperCollider, Pure Data, Processing, p5.js, D3.js
- **Languages:** English (*fluent*), Greek (*native*), French (*conversational*)

PUBLICATIONS

- **Toward Expert Bioacoustics Audio Language Models**
C. Plachouras et al. – Submitted to NeurIPS 2026
- **OmniVideoBench: Towards Audio-Visual Understanding Evaluation for Omni MLLMs**
C. Li et al – ICLR 2026 [\[Link\]](#)
- **Leveraging Unlabeled Data for Contrastive Learning of Vocal Imitation Representations**
A. Bhattacharjee, C. Plachouras, S. Chang – 1st place, QVIM Challenge, AES AIMLA 2025 [\[Link\]](#)
- **Towards a Unified Representation Evaluation Framework Beyond Downstream Tasks**
C. Plachouras, J. Guinot, G. Fazekas, E. Quinton, E. Benetos, J. Pauwels – IJCNN 2025 [\[Link\]](#)
- **Learning Music Audio Representations With Limited Data**
C. Plachouras, E. Benetos, J. Pauwels – ICASSP 2025 [\[Link\]](#)
- **Foundation Models for Music: A Review**
Y. Ma et al – arXiv [\[Link\]](#)
- **mir_ref: A Representation Evaluation Framework for Music Information Retrieval Tasks**
C. Plachouras, P. Alonso, D. Bogdanov – ML for Audio Workshop, NeurIPS 2023 [\[Link\]](#)
- **Music Rearrangement Using Hierarchical Segmentation**
C. Plachouras, M. Miron – ICASSP 2023 [\[Link\]](#)
- **Utilizing Hierarchical Structure for Audio-Based Music Similarity**
C. Plachouras – LBD, ISMIR 2021 [\[Link\]](#)
- **Mapping Timbre Space in Regional Music Collections using Harmonic-Percussive Source Separation (HPSS) Decomposition**
K. Ganguli, C. Plachouras, S. Şentürk, A. Eisenberg, C. Guedes – Timbre 2020 [\[Link\]](#)
- **Mapping the Sounds of the Swahili Coast and the Arab Mashriq: Music research at the intersection of computational analysis and cultural heritage preservation**
K. Trochidis, B. Russell, A. Eisenberg, K. Ganguli, O. Gomez, C. Plachouras, et al. – DLFm 2019 [\[Link\]](#)

AWARDS AND COMPETITIONS

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| • Full-ride scholarship, UKRI Centre for Doctoral Training in AI and Music | 2023-2027 |
| • Full-ride scholarship, NYU - NYU Abu Dhabi Undergraduate Scholarship | 2017-2021 |
| • 1 st place, London Music Tech Hackathon, Music Hackspace – for <i>thatsoundslike.me</i> | 2025 |
| • 1 st place, AES AIMLA Query by Vocal Imitation Challenge | 2025 |
| • Travel Grant, Neural Information Processing Systems (NeurIPS) | 2023 |
| • Travel Grant, Sound and Music Computing Conference | 2019 |
| • Semi-finalist, National Student Mathematics Olympiad, Greece | 2014, 2015, 2016 |

TEACHING

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| • Teaching Assistant , ECS795P Deep Learning and Computer Vision,
Graduate level (MSc, PhD), led by Shaogang Gong | Queen Mary University of London
Spring 2025 |
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ACADEMIC SERVICE

- **Organizer:** Chair of *New to ISMIR*, ISMIR (2026); DMRN+ 19 (2024)
- **Session Chair:** Position Papers, IJCNN (2025)
- **Volunteer:** ISMIR (2025); NeurIPS (2023)
- **Reviewer:** ICASSP (2026); UKAIRS (2025); ISMIR (2025, 2024); AES AIMLA (2025); DMRN+ 19 (2024)