CURRICULUM VITAE
DIMOSTHENIS MAKRIS

Personal Details

Dimosthenis (Dimos) Makris
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Greek Nationality
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Military obligations fulfilled
LinkedIn Profile

Research Interests

- Research on innovative DNN architectures for solutions in auto-mixing/mastering of audio recordings and enhancing of bad sources with noise removal and reverb

- Developing AI-driven end-to-end applications for assistive solutions in music composition.

Academic Studies

May 2020 – PhD in Department of Informatics of Ionian University, Corfu, Greece with title "Conditional Machine Learning Architectures for Harmonic and Rhythm Music Generation".

June 2014 – Master degree in Department of Informatics of Ionian University, Corfu, Greece with title "Information technology and Humanitarian Sciences".

November 2010 – Bachelor Degree in Department of Informatics of Aristotle University, Thessaloniki, Greece.

June 2003 – Diploma in Music Theory, grade "A" Excellent from Conservatory of Corfu.

June 2002 – First Certificate in English (FCE), University of Cambridge.

Teaching

- Hellenic Mediterranean University, Crete - Rethymno, Greece.
09/02/2026 to present:

Assistant Professor in **Department of Music Technology and Acoustics** with research field on «**Music Information Retrieval with AI**».

14/02/2025 to 06/02/2026

Adjunct Lecturer, Department of Music Technology and Acoustics**.** Independent teaching for the courses:

- "Computational Musicology" and "Protocols for Audio Mastering" on undergraduate levels for spring semester 2025.
- "Object-oriented Programming for Music Applications" and "Music Production Techniques" on undergraduate levels for winter Semester 2026.

- Ionian University. Spring Semesters 2015, 2017 and 2018:

Lab Assistant and Instructor on "Audio and Speech Processing" (lab – 2 hours/week) class, Department of Informatics, Ionian University.

Research

-Athena Research Center, Athens, Greece
15/03/2025 to 31/12/2025:

Working as Post-doctoral Research Fellow at "Archimedes" Research Unit on **NeuraLLMuse** project: Researching Neuro-Inspired creativity in LLMs for Music Generation tasks both in symbolic and audio domains.

- Singapore University Of Technology and Design (SUTD), Singapore
18/11/2019 to 29/05/2020 as Senior Research Assistant:
and
29/05/2020 to 18/11/2021 as Research Fellow I:

Working at AMAAI (Audio, Music and AI) lab, ISTD Pillar, SUTD. Examining innovative representations and architectures for conditional music generation using high-level musicalities such as emotions.

- *Aristotle University of Thessaloniki (AUTH), Thessaloniki, Greece*
01/02/2019 to 31/05/2019:

Research Assistant and Web Developer on the Chameleon project, a proof-of-concept computational creative system which is developed to learn harmonies from diverse idioms and generate novel harmonisations.

01/01/2015 to 30/06/2015
and
01/10/2015 to 30/09/2016

Research Assistant on the CoInvent program for exploring new musical concepts for conceptual blending and the implementation of a computationally creative harmonisation system.

- *Ionian University, Corfu, Greece*
01/01/2015 to 07/05/2020:

PhD Student in Department of Informatics, Ionian University, Corfu, Greece**.** Honoured with a scholarship from "The Hellenic Foundation for Research and Innovation" to support my research.

Professional Experience

01/11/2023 to 30/07/2024:

Research Artificial Intelligence Consultant at XLN Audio**,** Stockholm, Sweden.

Working with the Smart Tech team for researching and integrating new innovative A.I. automations to existing and upcoming plugins. Extensive research on de-mixing and audio-enhancing solutions.

13/06/2022 to 30/07/2023:

Research Artificial Intelligence Specialist at Music Tribe, Stockholm, Sweden**.**

Worked with the Advanced Signal Processing and Artificial Intelligence (**ASPAI**) research team (remote working). The ASPAI team defines and executes research strategies designed to deliver algorithms and intelligent automation for audio equipment products.

Extensive research for **automated mixing** solutions by helping inexperienced users to correctly use hardware and software audio effects. Developed multiple **proofs of concepts** for auto-balancing of audio signals by using Equalization.

01/06/2017 to 30/09/2019
and
01/10/2021 to 31/05/2022:

Head of the A.I. Team and **Music Expert** at Mercury Orbit Music.

Mercury Orbit Music is developing a new territory of edutainment by utilising a suite of A.I. enabled music generation tools and programs for benefiting the current and the next generation of music learners. The company has signed many contracts with private schools in the region of California, USA.

20/05/2012 to 30/09/2019:

Co-owner of the recording studio "Λυχνία" (Tube Studio). Worked as a **music producer** and **sound engineer**. Years of experience on recording studio albums, editing, mixing, mastering, and conducting outdoor recordings. Excellent knowledge of Cubase/Nuendo Pro, decent of Logic Pro and Pro Tools.

Awards and Distinctions

Distinction (November 2016): Ennovation is an international university competition on Entrepreneurship and Innovation. The competition runs by a network of 21 universities in Greece and Cyprus. In 2016, as **Tube Studio,** we submitted a project called "Online Reamper" as an innovative online service for recording studios. We reached into the grand finals.

Award (April 2017): Awarded with funding for **Tube Studio** by ΕΣΠΑ - ΝΕΟΦΥΗΣ ΕΠΙΧΕΙΡΗΜΑΤΙΚΟΤΗΤΑ with code Ν2ΝΦ-03582, as a company with innovative ideas. Total budget 45.550€

Award (01/08/2017 to 31/05/2018): Personal Grant (scholarship) from "The Hellenic Foundation for Research and Innovation" to support my PhD research, in the Ionian University, Corfu, Greece.

Invited Speaker (29/10/2018): 52nd Asilomar Conference on Signals, Systems and Computers, Pacific Grove, California, USA. Presentation, on behalf of **Mercury Orbit Music**, with title "Style

Imitation and Transfer through Machine Learning Architectures for Enhancing the Creativity of Musicians".

Distinction (30/11/2018): Mercury Orbit Music has been recognised as one of the top 30 teams of the IBM Watson A.I. XPRIZE.

Invited Speaker (28/5/2019 to 31/5/2019): AI for Good Global Summit 2019, Geneva, Switzerland. Presentation, on behalf of **Mercury Orbit Music**, in a special event organized by the XPRIZE Foundation for the final top 30 teams of the competition.

Invited Guest Editor (15/12/2020 to 31/1/2022): Special Issue "Big Music Data" from MDPI (5.3. CiteScore Scopus). This special issue aims to promote new advances and research directions that address the use of Big Data in music, including related challenges and opportunities.

Publications

Google Scholar Profile: https://scholar.google.gr/citations?user=REDwFBIAAAAJ&hl=en

Journals:

Kaliakatsos-Papakostas, M., Makris, D., Soiledis, K., Tsamis, K. T., Katsouros, V., & Cambouropoulos, E. (2025). Diffusion-inspired masked language modeling for symbolic harmony generation on a fixed time grid. *Applied Sciences*, *15*(17), 9513. Link

Kaliakatsos-Papakostas, M., Makris, D., Soiledis, K., Tsamis, K. T., Katsouros, V., & Cambouropoulos, E. (2025). Harmonytok: Comparing methods for harmony tokenization for machine learning. *Information*, *16*(9), 759. Link

Chua, P., Makris, D., Herremans, D., Roig, G., & Agres, K. (2024). Predicting emotion from music videos: exploring the relative contribution of visual and auditory information to affective responses. To appear on *Neural Computing and Applications.* Link

Makris, D., Kaliakatsos-Papakostas, M., Karydis, I., & Kermanidis, K. L. (2019). Conditional neural sequence learners for generating drums' rhythms. *Neural Computing and Applications, 31*(6), 1793-1804. Link

Kaliakatsos-Papakostas, M., Makris, D., Tsougras, C., & Cambouropoulos, E. (2016). Learning and creating novel harmonies in diverse musical idioms: An adaptive modular melodic harmonisation system. *Journal of Creative Music Systems*, *1*(1). Link

Chapters:

Makris, D., Kayrdis, I., & Sioutas, S. (2016). Automatic melodic harmonization: An overview, challenges and future directions. *Trends in music information seeking, behavior, and retrieval for creativity*, 146-165. Link

Conferences:

Makris, D., Barják, A., & Kaliakatsos-Papakostas, M., (in press). *A Cold Diffusion Approach for Percussive Dereverberation*. Paper accepted for presentation at the *International Joint Conference on Neural Networks (IJCNN)*, 2026 IEEE World Congress on Computational Intelligence (WCCI), Maastricht, Netherlands.

Kaliakatsos-Papakostas, M., Makris, D., Soiledis, K., & Tsamis, K.-T. (2026). *Encoder-only transformers for melodic harmonization: Representation emergence and inference strategies*. *Proceedings of Machine Learning Research, 303*, 1–11. Link

Kaliakatsos-Papakostas, M., Makris, D., Soiledis, K., Tsamis, K. T., Katsouros, V., & Cambouropoulos, E. (2025, December). Pay (Cross) Attention to the Melody: Curriculum Masking for Single-Encoder Melodic Harmonization. *In 2025 IEEE International Conference on Big Data (BigData)* (pp. 5007-5015). IEEE. Link

Kaliakatsos-Papakostas, M., Makris, D., Soiledis, K., Tsamis, K. T., Katsouros, V., Cambouropoulos, E. (2025). Incorporating Structure and Chord Constraints in Symbolic Transformer-based Melodic Harmonization. *The 6th Conference on AI Music Creativity (AIMC),* Brussels, Belgium. Link

Makris, D., Zixun, G., Kaliakatsos-Papakostas, M., & Herremans, D. (2022). Conditional Drums Generation using Compound Word Representations. *The 11th International Conference on Artificial Intelligence in Music, Sound, Art and Design (EvoMUSART).* Link

Kaliakatsos-Papakostas N., Bastas G., Makris D., Herremans D., Katsouros V., Maragos P. (2022). A Machine Learning Approach for MIDI to Guitar Tablature Conversion. In *Proceedings of the Sound and Music Computing Conference 2022*, SMC 2022. Link

Makris, Dimos, Kat R. Agres, and Dorien Herremans. "Generating lead sheets with affect: A novel conditional seq2seq framework." *2021 International Joint Conference on Neural Networks (IJCNN)*. IEEE, 2021. Link

Zixun, Guo, Dimos Makris, and Dorien Herremans. "Hierarchical recurrent neural networks for conditional melody generation with long-term structure." *2021 International Joint Conference on Neural Networks (IJCNN*). IEEE, 2021. Link

Makris, D., Koutsaidis, D., Zhang, Y., & Kaliakatsos-Papakostas, M. (2018). Style Imitation and Transfer through Machine Learning architectures for enhancing the creativity of Musicians. In *Proc. Of Asilomar Conference on Signals, Systems, and Computers*, Pacific Grove, CA, USA. Link

Makris, D., Kaliakatsos-Papakostas, M., & Kermanidis, K. L. (2018). DeepDrum: An Adaptive Conditional Neural Network for Generating Drum Rhythms. *The 2018 Joint Workshop on Machine Learning for Music, a joint workshop program of ICML, IJCAI/ECAI, and AAMAS*. Link

Makris, D., Kaliakatsos-Papakostas, M., Karydis, I., & Kermanidis, K. L. (2017, August). Combining LSTM and feed forward neural networks for conditional rhythm composition. In *International conference on engineering applications of neural networks* (pp. 570-582). Springer, Cham. Link

Kaliakatsos-Papakostas, M., Makris, D., Zacharakis, A., Tsougras, C., & Cambouropoulos, E. (2016, September). Learning and blending harmonies in the context of a melodic harmonisation assistant. In *IFIP International Conference on Artificial Intelligence Applications and Innovations* (pp. 520-527). Springer, Cham. Link

Makris, D., Karydis, I., & Cambouropoulos, E. (2016). VISA3: REFINING THE VOICE INTEGRATION/SEGREGATION ALGORITHM. In *Proceedings of the Sound and Music Computing Conference 2016*, SMC 2016. Link

Makris, D., Karydis, I., & Sioutas, S. (2015, September). The greek music dataset. In *Proceedings of the 16th International Conference on Engineering Applications of Neural Networks (INNS)* (pp. 1-7). Link

Makris, D., Kaliakatsos-Papakostas, M., & Cambouropoulos, E. (2015, June). A probabilistic approach to determining bass voice leading in melodic harmonisation. In *International Conference on Mathematics and Computation in Music* (pp. 128-134). Springer, Cham. Link

Makris, D., Kaliakatsos-Papakostas, M. A., & Cambouropoulos, E. (2015). Probabilistic Modular Bass Voice Leading in Melodic Harmonisation. In *Proceedings of the 16th International Society for Music Information Retrieval Conference (ISMIR)*, (pp. 323-329). Link

Makris, D., Kermanidis, K. L., & Karydis, I. (2014, September). The greek audio dataset. In *IFIP International Conference on Artificial Intelligence Applications and Innovations* (pp. 165-173). Springer, Berlin, Heidelberg. Link

Makris, D., Euaggelopoulos, K., Chorianopoulos, K., & Giannakos, M. N. (2013, November). Could you help me to change the variables? Comparing instruction to encouragement for teaching programming. In *Proceedings of the 8th Workshop in Primary and Secondary Computing Education* (pp. 79-82). Link

References

- András Barják: Head of the Product Tech team, XLN Audio, Stockholm, Sweden.
email: andras.barjak@xlnaudio.com

- Sacha Krstulovic: Senior AI Consultant and researcher, ex - Head of Advanced Signal Processing and Artificial Intelligence research team on Music Tribe, Manchester, United Kingdom.
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- Dorien Herremans: Assistant Professor, Singapore University of Technology and Design, ISTD Pillar, Singapore.
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- Emilios Cambouropoulos: Professor, Department of Music Studies, Aristotle University of Thessaloniki, Greece.
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