RODRIGO MIRA

PhD candidate at Imperial College London, ex-research intern at Meta AI

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EDUCATION

PhD in Machine Learning
Imperial College London

📅 Oct 2019 – Ongoing   📍 London, GB

- Focused on applying self-supervised learning and generative modeling to leverage unlabelled audio-visual speech effectively.
- Supervised by Björn Schuller (Professor of AI at Imperial College, **>50,000 citations**) and Maja Pantic (Professor of AI at Imperial College, **>45,000 citations**).
- Published **4 first-author papers**, 5 papers in total, and presented my work in 3 workshops.
- Published in IEEE Transactions on Cybernetics (**Impact factor: 19.12**), CVPR (**#1 conference in engineering and computer science**), and Interspeech.

MSc in Advanced Computing
Imperial College London

📅 Oct 2017 – Oct 2018   📍 London, GB

- Taught courses (9 modules): 68.2 % (Merit) | Master's thesis: 75 % (**Distinction**)
- Modules included: Dynamical Systems and Deep Learning, Mathematics for Machine Learning, Advanced Statistical Machine Learning and Pattern Recognition, and Reinforcement Learning.
- Thesis was focused on leveraging Reinforcement Learning to create automatic musical composers that consistently adhere to specific genres and styles.

### BSc in Computer Engineering and Information Systems
Instituto Superior Técnico

📅 Sep 2014 – Jul 2017   📍 Lisbon, Portugal

- Taught courses (29 modules): 18.00/20
- **3 academic excellence diplomas** (one for each academic year).
- Modules included: Artificial Intelligence, Object-Oriented Programming, Databases, and Distributed Systems.

LANGUAGES

English
Portuguese
Spanish
German
French
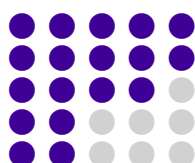
EXPERIENCE

Research Intern
Meta AI

📅 Jun – Sep 2022   📍 London, GB

- Continued my work in audio-visual speech enhancement from the previous internship, resulting in a new research paper: LA-VocE: Low-SNR Audio-visual Speech Enhancement using Neural Vocoders.
- Finished and delivered our self-supervised learning project.

Part-time researcher
Meta AI

📅 Mar – Jun 2022   📍 London, GB

- Continued my work in audio-visual speech enhancement from the previous internship, and developed new collaborations with other researchers.
- Started a new self-supervised learning project via a collaboration with other researchers from my team.

Research Intern
Meta AI

📅 Aug – Dec 2021   📍 London, GB

- Developed a collaboration between my team at Meta AI (led by Maja Pantic) and another team at Meta Reality Labs Audio Research (led by Vamsi Krishna Ithapu).
- Developed a new project on audio-visual speech enhancement.

Teaching Assistant
Imperial College London

📅 Jan – April 2021   📍 London, GB

- Worked as a teaching assistant for the Introduction to Machine Learning (70050) course, led by Dr. Josiah Wang at Imperial College London.

Research Assistant
Imperial College London

📅 Feb – Oct 2019   📍 London, GB

- Worked as a research assistant in the Intelligent Behaviour Understanding Group (IBUG) at Imperial College London, supervised by Maja Pantic and Björn Schuller. Developed research projects on video-to-speech synthesis and audio-visual self-supervised learning.

SELECTED PUBLICATIONS

End-to-End Video-to-Speech Synthesis using Generative Adversarial Networks

Rodrigo Mira, Konstantinos Vougioukas, Pingchuan Ma, Stavros Petridis, Björn W Schuller, Maja Pantic

📖 IEEE Trans. Cybernetics   📅 2022

LiRA: Learning Visual Speech Representations from Audio through Self-Supervision

Pingchuan Ma and **Rodrigo Mira** (equal contribution), Stavros Petridis, Björn W. Schuller, Maja Pantic

📖 Interspeech 2021   📅 2021

SVTS: Scalable Video-to-Speech Synthesis

Rodrigo Mira, Alexandros Haliassos, Stavros Petridis, Björn W Schuller, Maja Pantic

📖 Interspeech 2022   📅 2022

Leveraging Real Talking Faces via Self-Supervision for Robust Forgery Detection

Alexandros Haliassos, **Rodrigo Mira**, Stavros Petridis, Maja Pantic

📖 CVPR 2022   📅 2022

LA-VocE: Low-SNR Audio-visual Speech Enhancement using Neural Vocoders

Rodrigo Mira, Buye Xu, Jacob Donley, Anurag Kumar, Stavros Petridis, Vamsi Krishna Ithapu, Maja Pantic

📖 ICASSP 2023   📅 2022   🕐 under review

TALKS AND PRESENTATIONS

Conference Oral Presentation

Interspeech 2022

📅 Sep 2022   📍 Incheon, South Korea

- Gave a 20-minute oral presentation about our new scalable video-to-speech model (SVTS), demonstrating our state-of-the-art results.

Research Presentation with the President of Portugal

Imperial College London

📅 Jun 2022   📍 London, GB

- I presented a summary of my PhD's research contributions to the **president of Portugal**, Marcelo Rebelo de Sousa, as well as 50+ other attendees in a special event held at Imperial College London.

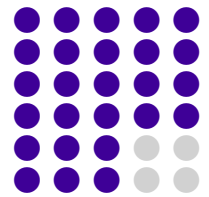### Show & Tell Demo - Video-driven Speech Reconstruction using GANs

ICASSP 2020

📅 May 2020   📍 Barcelona, Spain

- Gave a 15-minute talk where I introduced our new video-to-speech model and showed its performance using an interactive live demo.

SOFTWARE SKILLS

Python
Pytorch
Pytorch Lightning
Weights and Biases
Tensorflow
Amazon Web Services

EXTRA-CURRICULAR

Squash Club

Imperial College London

📅 Jan 2022 – Ongoing   📍 London, GB

- I organize a squash club at Imperial College London with weekly matches and 15+ members.

ASPARaGus - A Speech & Audio Reading Groupuscule

Imperial College London

📅 Mar 2022 – Ongoing   📍 London, GB

- I attend and present in a bi-weekly research group with 5+ colleagues from Imperial College London.

Landmarks - Jazz Band at Meta AI

Meta

📅 March – Sep 2022   📍 London, GB

- Organized a Jazz band with my team at Meta AI named Landmarks, where I played bass every week.

STT Security Group

Instituto Superior Técnico

📅 Feb 2016 – Jul 2017   📍 Lisbon, Portugal

- Was a member of the Computer Software Security group (STT) representing Instituto Superior Técnico and led by professor Pedro Adão, where I frequently engaged in CTF (Capture the Flag) to score points for our team.

Guitar, Jazz Band and Music Theory

Interartes

📅 Aug 2010 – Sep 2015   📍 London, GB

- Attended guitar lessons at Interartes and played with a Jazz band for 4 years, frequently in front of live audiences. During this time I was also taught the fundamentals of Music Theory and Harmony.