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

- Thesis submitted.
- 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**, 6 papers in total, and presented in 3 workshops.
- Published in IEEE Transactions on Cybernetics (**Impact factor: 19.12**), CVPR (**#1 conference in engineering and computer science**), ICLR (**#1 conference in artificial intelligence**), 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
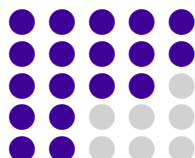
EXPERIENCE

Research Intern

Meta AI

- Jun – Sep 2022
- London, GB

- Continued 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) which was submitted to ICASSP 2023.
- Finished and delivered our self-supervised learning project, culminating in a **new research paper** (Jointly Learning Visual and Auditory Speech Representations from Raw Data), which was **accepted** to ICLR 2023 (**#1 conference in artificial intelligence**).

Part-time Researcher

Meta AI

- Mar – Jun 2022
- London, GB

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

Research Intern

Meta AI

- Aug – Dec 2021
- London, GB

- Developed a new 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), hosting weekly meetings attended by 10+ colleagues.
- Started 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, attended by 300+ students and 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

Jointly Learning Visual and Auditory Speech Representations from Raw Data

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

📄 **ICLR 2023** 📅 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

EXTRA-CURRICULAR

Squash Club
Imperial College London

📅 Jan 2022 – Ongoing 📍 London, GB

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

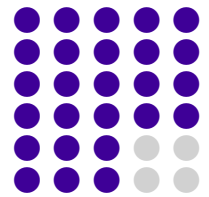## ASPARaGus - A Speech & Audio Reading Groupuscule
Imperial College London

📅 Mar 2022 – Ongoing 📍 London, GB

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

SOFTWARE SKILLS

Python
Pytorch
Pytorch Lightning
Weights and Biases
Tensorflow
Amazon Web Services

TALKS AND PRESENTATIONS

Conference Oral Presentation
Interspeech 2022

📅 Sep 2022 📍 Incheon, South Korea

- Gave a 20-minute oral presentation for an audience of 30+ attendees about our new scalable video-to-speech model (SVTS), demonstrating our state-of-the-art results.

Workshop presentation at CVPR 2022
Sight and Sound Workshop, CVPR 2022

📅 Jun 2022 📍 New Orleans LA, USA

- Presented our new scalable video-to-speech model (later published in Interspeech 2022) for an audience of 20+ attendees.

Research Presentation with the President of Portugal
Imperial College London

📅 Jun 2022 📍 London, GB

- 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.

Workshop presentation at CVPR 2021
Sight and Sound Workshop, CVPR 2021

📅 Jun 2021 📍 Virtual

- Presented our state-of-the-art research on video-to-speech synthesis (later published in IEEE Trans. Cybernetics) for a virtual audience of 50+ attendees.

Show & Tell Demo
ICASSP 2020

📅 May 2020 📍 Barcelona, Spain

- Showcased an interactive demo of our video-to-speech synthesis model.