# Gonçalo Mordido

goncalomordido@gmail.com goncalomordido https://goncalomordido.github.io

## Experience

2022 – Now | **Mila - Quebec AI Institute** (Canada)
*Postdoctoral Fellow*
- Efficient training and inference methods for deep neural networks.
- Mentored a total of 7 Ph.D. students, 5 M.Sc. students, and 1 intern.
- Awarded FRQ's *postdoc merit scholarship*.
- *Advisors*: Prof. Sarath Chandar
  Prof. François Leduc-Primeau

2017 – 2021 | **Hasso Plattner Institute** (Potsdam, Germany)
*Research Associate* (3 years and 10 months)
- Diversification, compression, and evaluation methods for generative adversarial networks.
- Mentored 7 M.Sc. students and 1 intern.
- Graduated with *great distinction*.
- *Advisor*: Prof. Christoph Meinel

2020 | **NVIDIA** (Germany)
*Research Intern* (4 months)
- Compression of depth-wise separable convolutions in deep neural networks.
- Awarded a *recognition award* for "exceptional and outstanding contributions".
- *Manager*: Dr. Alexander Keller

2018 – 2019 | **NVIDIA** (Germany)
*Research Intern* (6 months)
- Compression of deep neural networks using Monte Carlo methods.
- *Manager*: Dr. Alexander Keller

2016 – 2017 | **NOVA University Lisbon** (Portugal)
*Research Assistant* (1 year)
- Automated discovery and quality assessment of user-generated content with machine learning.
- *Advisors*: Prof. Sofia Cavaco
  Prof. João Magalhães

## Education

2017 – 2021 | **Hasso Plattner Institute** (Germany)
*Ph.D. in Artificial Intelligence*
- Grade: *Magna cum laude*
- Thesis: Diversification, compression, and evaluation methods for generative adversarial networks.

2015 – 2017 | **NOVA University Lisbon** (Portugal)
*M.Sc. in Computer Science*
- Grade: *A*
- Thesis: Automated organization and quality analysis of user-generated audio content.

2012 – 2015 | **NOVA University Lisbon** (Portugal)
*B.Sc. in Computer Science*
- Grade: *A*

## Awards & Recognition

2023 | **Postdoctoral merit scholarship**. *Fonds de Recherche du Québec*

2021 | **Honors Ph.D. graduation**. Hasso Plattner Institute

2020 | **Recognition award** for "exceptional and outstanding contributions". NVIDIA

2015 | **Best final year B.Sc. project**. NOVA University Lisbon

2015 | **1st place hackathon winner**. NOVA University Lisbon

## Publications

2022 | **Deep learning on a healthy data diet: Finding important examples for fairness and performance.**
A. Zayed, P. Parthasarathi, G. Mordido, H. Palangi, S. Shabanian, S. Chandar. *AAAI 2023*
**Sharpness-aware training for accurate inference on noisy DNN accelerators.**
G. Mordido, S. Chandar, F. Leduc-Primeau. *CoLLAs 2022 workshop & EIW 2022*
**Improving meta-learning generalization with activation-based early-stopping.**
S. Guiroy, C. Pal, G. Mordido, S. Chandar. *CoLLAs 2022 & Montreal AI Symposium 2022*
**MemSE: Fast MSE prediction for noisy memristor-based DNN accelerators.**
J. Kern, S. Henwood, G. Mordido, E. Dupraz, A. Aissa-El-Bye, Y. Savaria, F. Leduc-Primeau. *AICAS 2022*
**Tiny CNN for seizure prediction in wearable biomedical devices.**
Y. Zhang, Y. Savaria, S. Zhao, G. Mordido, M. Sawan, F. Leduc-Primeau. *EMBC 2022 & EIW 2022*

2021 | **Compressing 1D time-channel separable convolutions using sparse random ternary matrices.**
G. Mordido, M. Keirsbilck, A. Keller. *INTERSPEECH 2021*
**Evaluating post-training compression in GANs using locality-sensitive hashing.**
G. Mordido, H. Yang, C. Meinel. *Preprint*
**Assessing image and text generation with topological analysis and fuzzy logic.**
G. Mordido*, J. Niedermeier*, C. Meinel. *WACV 2021*

2020 | **Mark-Evaluate: Assessing language generation using population estimation methods**.
G. Mordido, C. Meinel. *COLING 2020*
**Best student forcing: A simple training mechanism in adversarial language generation**.
J. Sauder*, T. Hu*, X. Che, G. Mordido, H. Yang and C. Meinel. *LREC 2020*
**Monte Carlo gradient quantization**.
G. Mordido, M. Keirsbilck, A. Keller. *CVPR 2020 EDLCV workshop*
**Improving the evaluation of generative models with fuzzy logic**.
J. Niedermeier*, G. Mordido* and C. Meinel. *AAAI 2020 Meta-Eval workshop*
**microbatchGAN: Stimulating diversity with multi-adversarial discrimination**.
G. Mordido, H. Yang, and C. Meinel. *WACV 2020*

2019 | **Instant quantization of neural networks using Monte Carlo methods.**
G. Mordido*, M. Keirsbilck*, A. Keller. *NeurIPS 2019 EMC2 workshop*

2018 | **Pseudo-ground-truth for adversarial text generation using reinforcement learning**.
J. Sauder, X. Che, G. Mordido, H. Yang and C. Meinel. *NeurIPS 2018 Deep RL workshop*
**Dropout-GAN: Learning from a dynamic ensemble of discriminators.**
G. Mordido, H. Yang, and C. Meinel. *KDD 2018 DL'Day*

2017 | **Automatic organisation, segmentation, and filtering of user-generated audio content**.
G. Mordido, J. Magalhaes, and S. Cavaco. *MMSP 2017*
**Automatic organisation and quality analysis of user-generated content with audio fingerprinting.**
G. Mordido, J. Magalhaes, and S. Cavaco. *EUSIPCO 2017*

## Patents

2022 | **Incorporating a ternary matrix into a neural network**.
A. Keller, G. Mordido, M. Van keirsbilck. *US Patent*

2019 | **Representing a neural network utilizing paths within the network to improve a performance of the neural network**.
A. Keller, G. Mordido, N. Gamboa, M. Van keirsbilck. *US Patent*

## Mentoring

2022 – Now | **Mila**. *Simon Guiroy* (Ph.D.), *Abdelrahman Zayed* (Ph.D.), *Pranshu Malviya* (Ph.D.), *Jerry Huang* (MSc.), *Selim Gilon* (MSc., 2022), *Kaushik Moudgalya* (MSc., 2022), *Charmi Chokshi* (MSc., 2022), *Istabrak Abbes* (intern, 2022)
**Polytechnique Montreal**. *Sébastien Henwood* (Ph.D.), *Jonathan Kern* (Ph.D.), *Yang Zhang* (Ph.D.), *Batoul Sayegh* (Ph.D.), *Kamran Chitsaz* (MSc.)

2018 – 2021 | **Hasso Plattner Institute**. *Philipp Hildebrandt* (MSc., 2021), Cornelius Hagmeister (MSc., 2020), Julian Niedermeier (MSc., 2019), Jonathan Sauder (intern, 2018)

## Funding Proposals

2023 – 2024 | **Fonds de Recherche du Québec**. 35.000 *CAD (1 year), Poly MTL*

2022 – 2023 | **Samsung (SAIT)**. 45.000 *CAD (1 year), Mila*

2022 – 2023 | **Microsoft Research**. 60.000 *CAD (1 year), Mila*

2020 – 2022 | **SAP Innovation Center**. 200.000*€ (2 years), HPI*

## Presentations

2022 | **Paper presentations**. *CoLLAs 2022 workshop, Edge Intelligence workshop 2022*
**Invited talk: Sharpness-aware training for accurate inference on noisy DNN accelerators**. *CRL Symposium*

2021 | **Invited talk: Compression methods for neural networks**. *MIT CSAIL*
**Invited talk: Compression methods for neural networks**. *University of British Columbia*
**Invited talk: 1x1-convolutions by random ternary matrices**. *GTC 2021*
**Paper presentations**. *INTERSPEECH 2021, WACV 2021*

2020 | **Paper presentations**. *COLING 2020, CVPR 2020 workshop, WACV 2020, AAAI 2020 workshop*

2019 | **Paper presentation**. *NeurIPS 2019 workshop*

2018 | **Paper presentation**. *KDD 2018 workshop*

2017 | **Invited talk: Dialogue generation with generative adversarial networks**. *SAP TechEd 2017*
**Paper presentation**. *EUSIPCO 2017*

## Academic service

2022 | **Co-organizer**. *Hardware-Aware Efficient Training* (HAET) workshop at ICML 2022, *1st Conference on Lifelong Learning Agents* (CoLLAs 2022), *Chandar Research Lab* (CRL) 2022 symposium at Mila

2017 – Now | **Reviewer**. *ACL 2023, EMNLP 2021, EACL 2021, CVPR 2021, Knowledge-Based Systems (2021), ACL 2020, EMNLP 2020, WACV 2020, ICIS 2019, Neural Computing and Applications (2019), IEEE Access (2018), IEEE Big Data 2017*

## Teaching

2022 | **Machine Learning** (graduate course, INF8245E, Polytechnique Montreal)
*Lead Teaching Assistant*
**Neural networks: Architectures and applications** (graduate course, ELE6307, Polytechnique Montreal)
*Guest Lecturer & Assignment Editor*

2021 | **Clean-IT: Towards sustainable digital technologies** (MOOC, openHPI)
*Guest Lecturer*

2020 | **Practical applications of deep learning** (graduate course, Hasso Plattner Institute)
*Teaching Assistant*

2019 | **Machine intelligence with deep learning** (graduate course, Hasso Plattner Institute)
*Teaching Assistant*

2018 | **Competitive problem solving with deep learning** (graduate course, Hasso Plattner Institute)
*Teaching Assistant*

2017 | **Machine intelligence with deep learning** (graduate course, Hasso Plattner Institute)
*Teaching Assistant*
**Natural language generation using GANs** (graduate project, Hasso Plattner Institute)
*Teaching Assistant*