



# Amedeo Roberto Esposito



31/08/1994



Wien, Austria



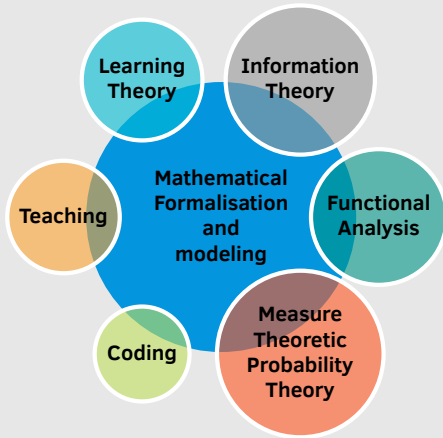
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## Skills



## Languages

Swedish

Japanese

German

French

English

Italian

## Current Employment

09/2022 - ... **Postdoctoral Scholar, Institute of Science and Technology Austria (ISTA)** ISTA  
 Klosterneuburg, Austria  
 Host: Marco Mondelli

## Education

2017 - 2022 **PhD, School of Computer and Communication Sciences** EPFL  
 Lausanne, Switzerland  
 Thesis Title: A Functional Perspective on Information Measures  
 Supervisor: Michael Gastpar

2015 - 2017 **MSc., Computer Science** University of Salerno  
 Fisciano, Salerno, Italy  
 110/110 cum laude and distinction  
 Thesis Topic: Entropic Causal Inference, Supervisor: Ugo Vaccaro

## Research

- 2024 **Lower-Bounds on the Bayesian Risk Via Information Measures**  
 Authors: Amedeo Roberto Esposito, Adrien Vandenbroucque, Michael Gastpar  
 Accepted for publication in the Journal of Machine Learning Research (JMLR)  
 Available Online
- Aug 2021 **Generalization Error Bounds Via Rényi-,  $f$ -Divergences and Maximal Leakage**  
 Authors: Amedeo Roberto Esposito, Michael Gastpar, Ibrahim Issa  
 IEEE Transactions on Information Theory Volume: 67, Issue: 8  
 Available Online
- March 2023 **Concentration without Independence via Information Measures**  
 Authors: Amedeo Roberto Esposito, Marco Mondelli  
 Submitted to IEEE Transactions on Information Theory  
 Available Online  
 A conference version has been accepted at the International Symposium on Information Theory (ISIT) 2023
- Feb 2023 **Generalization Error Bounds for Noisy, Iterative Algorithms via Maximal Leakage**  
 Authors: Ibrahim issa, Amedeo Roberto Esposito, Michael Gastpar  
 Accepted for presentation at Annual Conference on Learning Theory (COLT) 2023  
 Available Online
- Jul 2022 **From Generalisation Error to Transportation-cost Inequalities and Back**  
 Authors: Amedeo Roberto Esposito, Michael Gastpar  
 International Symposium on Information Theory 2022 - Helsinki  
 Available Online
- Jul 2022 **On Sibson's  $\alpha$ -Mutual Information**  
 Authors: Amedeo Roberto Esposito, Adrien Vandenbroucque, Michael Gastpar  
 International Symposium on Information Theory 2022 - Helsinki  
 Available Online
- Jul 2022 **Lower-bounds on the Bayesian Risk in estimation procedures via  $f$ -Mutual Information**  
 Authors: Adrien Vandenbroucque, Amedeo Roberto Esposito, Michael Gastpar  
 International Symposium on Information Theory 2022 - Helsinki  
 Available Online

- Jul 2022 **Towards a Standard Testing Data Set in Privacy**  
 Authors: Amedeo Roberto Esposito  
 Symposium on Open Data and Knowledge for a Post-Pandemic Era - UK  
 Available Online
- Jul 2021 **On conditional Sibson's  $\alpha$ -Mutual Information**  
 Authors: Amedeo Roberto Esposito, Diyuan Wu, Michael Gastpar  
 International Symposium on Information Theory 2021 - Melbourne  
 Available Online
- Jul 2021 **Lower-bounds on the Bayesian Risk in estimation procedures via Sibson's  $\alpha$ -Mutual Information**  
 Authors: Amedeo Roberto Esposito, Michael Gastpar  
 International Symposium on Information Theory 2021 - Melbourne  
 Available Online
- Jul 2020 **Robust Generalization via  $f$ -Mutual Information**  
 Authors: Amedeo Roberto Esposito, Michael Gastpar, Ibrahim Issa  
 International Symposium on Information Theory 2020 - Los Angeles  
 Available Online
- Feb 2020 **Robust Generalization via  $\alpha$ -Mutual Information**  
 Authors: Amedeo Roberto Esposito, Michael Gastpar, Ibrahim Issa  
 International Zürich Seminar, pages 96-100  
 Available Online
- Aug 2019 **Learning and Adaptive Data Analysis via Maximal Leakage**  
 Authors: Amedeo Roberto Esposito, Michael Gastpar, Ibrahim Issa  
 Information Theory Workshop 2019 - Visby  
 Available Online
- Jul 2019 **Strengthened Information-theoretic Bounds on the Generalization Error**  
 Authors: Ibrahim Issa, Amedeo Roberto Esposito, Michael Gastpar  
 International Symposium on Information Theory 2019 - Paris  
 Available Online

## Talks & Conferences

- 2024 **Program Committee Member for the International Conference on Mobile Learning 2024** ML 2024
- 2024 **Program Committee Member for the International Workshop on Combinatorial Algorithms 2024** IWOCA 2024
- 2023 **Technical Program Committee Member for the International Symposium on Information Theory 2023** ISIT 2023
- 2023 **Program Committee Member for the Workshop on Federated Learning Technologies 2023** TheWebConf
- Nov 2023 **"A functional perspective on Information Measures" at Cambridge University** Seminar
- Sep 2023 **Visiting Scientist at the Department of Computer Science in Università degli studi di Salerno**
- June 2023 **"A functional perspective on Information Measures" at Bocconi University** Seminar
- Apr 2023 **"Concentration without independence via Information Measures" at EPFL** EPFL
- Nov 2021 **Invited Talk at INRIA, Paris** Group
- Oct 2021 **"Information Measures, Independence and Learning" at Universidad Nacional Autónoma de México (Online)** Seminar

## Teaching

2023 - ... **Information Theory (for Data Science)** ISTA, Fall 2023

2017 - 2022 **Teaching Assistance** EPFL

- Advanced information, computation, communication II ('21-'22)
- Networks Out of Control (Elements of Random Graph theory, 2018)
- Information, Computation and Communication (2018 and 2020)
- Advanced Probability and Applications (2019)
- Foundations of Data Science (2019)
- Signals and Systems (2020)

2016 - 2017 **Teaching Assistance** University Of Salerno

- Mathematical Methods for Computer Science
- Algorithm Design
- Introduction to Algorithms and Data Structures
- Data Structures

## Project Supervision

2017 - 2023 **Project Supervision** EPFL

- Diyuan Wu, now PhD student at ISTA - "Definition and application in hypothesis testing of a new information measure" ( Included in a work accepted and presented at ISIT 2021)
- Adrien Vandenbroucque, now PhD student at EPFL - "Lower bounds on the risk in distributed estimation problems" (Included in a work accepted and presented at ISIT 2022 and in a submission to JMLR)
- Lifu Jin - "Transportation-Cost and Strong Data Processing Inequalities"

## Reviewing

### Journals

- Entropy
- IEEE Transactions on Information Theory
- IEEE Journal on Selected Areas in Communications
- Transactions on Machine Learning Research

### Conferences

- IEEE International Symposium on Information Theory (ISIT)
- IEEE Information Theory Workshop (ITW)
- Conference on Learning Theory (COLT)

## Hobbies and Passions

2021 - ... **Host of an (italian) Podcast on Science Dissemination** Link

- I have been the host of an Italian podcast in which I talk about science. The topics range from basic neuroscience (neuroplasticity, influence of the neurotransmitters on behaviour, etc.), to math, basic biology, psychiatry, nutrition, etc. One of the purposes is to get people closer to science by presenting the scientific literature in a simple and accessible way. Another purpose is to increase the visibility of local scientists via interviews. This provides a platform in which experts can talk about the fields they work in, the research they perform and the impact that this has on society and progress.