

# Amedeo Roberto Esposito



31/08/1994



Forsthausgasse 11, 1200 Wien



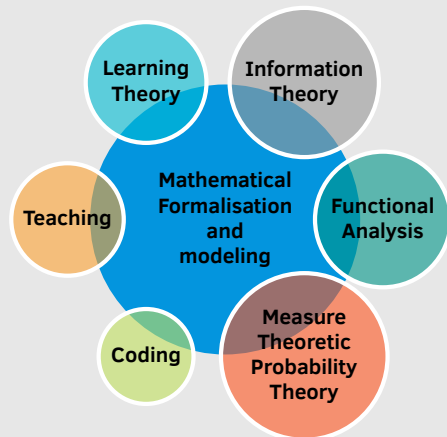
+43 69010198688



aesposit@ist.ac.at

[www.amedeorobertoesposito.com](http://www.amedeorobertoesposito.com)

## Skills



## Languages

Swedish

German

Japanese

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

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 2023

March 2023 **Lower-Bounds on the Bayesian Risk Via Information Measures**  
Authors: Amedeo Roberto Esposito, Adrien Vandenbroucq, Michael Gastpar  
Submitted to Journal on Machine Learning Research (JMLR)  
Available Online

Feb 2023 **Asymptotically Optimal Generalization Error Bounds for Noisy, Iterative Algorithms**  
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 Vandenbroucq, 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 Vandenbroucq, Amedeo Roberto Esposito, Michael Gastpar  
International Symposium on Information Theory 2022 - Helsinki  
Available Online

# Coding Skills

Java

R

C#

XML, XPath, XQuery

Game Development (Unity)

Javascript

Project Management

Mobile Development

PHP

C,C++

Jul 2021

## On conditional Sibson's $\alpha$ -Mutual Information

Authors: Amedeo Roberto Esposito, Diyu 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

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 2021

### Invited Talk for the equipe Comète, hosted by Catuscia Palamidessi

INRIA Saclay and LIX

Oct 2021

### Invited talk at the "Information Theory, Machine Learning and Statistics Seminar"

Universidad Nacional Autónoma de México (UNAM)

[Link to Online Schedule](#)

## Teaching

2017 - 2022 **Teaching Assistance**

EPFL

- Advanced information, computation, communication II (Head Teaching Assistant, 2021 and 2022)
- 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 - "Definition and application in hypothesis testing of a new information measure" ( Included in a work accepted and presented at ISIT 2021)
- Adrien Vandenbroucq - "Lower bounds on the risk in distributed estimation problems" (Included in a work accepted and presented at ISIT 2022 and in a submission to IEEE Transactions on IT)
- 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 am 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.