Emanuele Sansone

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Summary

I'm a researcher with background in machine learning. Previously, I was working on statistical machine learning, focusing on understanding how to exploit unlabeled data in the context of semi-supervised, positive unlabeled and unsupervised learning (i.e. deep generative models and representation learning). My current research interest is at the intersection between unsupervised learning and logic. Specifically, I'm interested in devising algorithms which can discover interpretable theories (in terms of first-order logic) directly from noisy and ambiguous raw data. I have excellent organizational, communication and presentation skills developed over different teaching and supervising experiences at university as teaching assistant and in sports as ski coach and ski master instructor.

Education

2013-2018	**Ph.D.** *ICT doctoral school, University of Trento, Italy* Thesis: "Towards Uncovering the True Use of Unlabeled Data in Machine Learning" Advisor: Prof. Francesco G.B. De Natale.
2011-2012	**M.Sc. in Telecommunications Engineering (magna cum laude)** University of Trento, Italy Thesis: "Multimodal Photo Galleries Synchronization" Advisor: Prof. Nicola Conci, Giulia Boato.
2008-2010	**B.Sc. in Telecommunications Engineering** University of Trento, Italy Thesis: "Master P-NET protocol implementation on PIC 32 architecture" Advisor: Prof. Dario Petri, Eng. Michele Corrà.

Work and Research Experience

2020-to date	PostDoc Researcher *KU Leuven, Leuven, Belgium* Advisor: Luc de Raedt.
2018-2020	Research Scientist *Huawei Technologies R&D, London, UK* Conducting research in the area of deep generative models and self-supervised learning. Supervising students on applied machine learning: Yinbai Li (Bachelor student in Mathematics at University of Cambridge), Xingyu Jin (Master student in Computer Science at University of Edinburgh).
2015-2016	Research Internship *LAMDA group, Nanjing University, China* Advisor: Prof. Zhi-Hua Zhou. Working on positive unlabeled learning.

Didactic Activities

2020	Teaching Assistant, Machine Learning and Inductive Inference (B-KUL-H02C1a-2021) M. Sc. in Computer Science, KU Leuven, Belgium
2016	Teaching Assistant, Computer Vision (Code 140266) *M.Sc. in Telecommunications Engineering, University of Trento, Italy*
2015	Teaching Assistant, Multimedia Networking (Code 140151) *M.Sc. in Telecommunications Engineering, University of Trento, Italy*

Professional Services

Program Chair: ECML/PKDD 2021.

Conference Reviewer: ICLR 2021-2022, NeurIPS 2021, AISTATS 2022.

Journal Reviewer: IEEE Transactions on Neural Networks and Learning Systems, IEEE Transactions on Image Processing, Machine Learning (Springer).

Publications & Pre-prints

arXiv 2021   **LSB: Local Self-Balancing MCMC in Discrete Spaces**
E. Sansone

arXiv 2021   **Leveraging Hidden Structure in Self-Supervised Learning**
E. Sansone

ECAI 2020   **Coulomb Autoencoders**
E. Sansone, H. T. Ali, J. Sun

PhD 2018   **Towards Uncovering the True Use of Unlabeled Data in Machine Learning**
E. Sansone

PAMI 2018   **Efficient Training for Positive Unlabeled Learning**
E. Sansone, F.G.B De Natale, Z.H. Zhou

arXiv 2017   **Training Feedforward Neural Networks with Standard Logistic Activations is Feasible**
E. Sansone, F.G.B. De Natale

TMM 2017   **Automatic Synchronization of Multi-User Photo Galleries**
E. Sansone, K. Apostolidis, N. Conci, G. Boato, V. Mezaris, F.G.B. De Natale

ECAI 2016   **Classtering: Joint Classification and Clustering with Mixture of Factor Analysers**
E. Sansone, A. Passerini, F.G.B. De Natale

Invited Talks & Seminars

2019   **Coulomb Autoencoders**
Invited Talk - Symposium on Deep Generative Models, British Computer Society, London, UK)

2017   **Generative Adversarial Networks**
Seminar - Fondazione Bruno Kessler, Trento, Italy)

Awards

2021   Outstanding Reviewer Award
ICLR 2021

2016   Academic Hardware Grant Award, NVIDIA
Two Awards consisting of a NVIDIA Titan X GPU each

2012   Merit Award, University of Trento
Trento, Italy

Learning Certificates

Online Courses (Coursera): Neural Networks for Machine Learning 2017, Algorithms Specialization 2020

Summer Schools: Machine Learning Summer School at University of Texas, Austin 2015, Full Stack Deep Learning Bootcamp at University of California, Berkeley 2018

Sport Professional Experience

2011-to date	**Ski master instructor**
	Italy
	This is the highest professional degree in alpine skiing (the total number of ski master instructors in Italy is around 200), which can be achieved by demonstrating excellent skiing capabilities as well as strong organizational, didactical and methodological skills used when coaching.
	I hold several professional education and training courses for ski instructors and candidate ski instructors. The following is a list of people I prepared to become ski instructors: Alessandro Berlanda, Camilla Berlanda, Martina Kerschbaumer, Davide Raineri, Valentina Zampedri, Erman Baldessari, Federico Tonezzer, Martina Longobardi, Chiara Villotti, Stefano Gonzo, Francesca Cella, Samuel Piffer, Teo Valle, Martino Santoni, Emma Santoni, Thomas Corradino, Silvia Zeni, Marco Faccenda.
2007-2017	**Ski coach**
	Italy
	Coach of young athletes (6-20 years old) in several racing ski teams: Ski Team Sopramonte (2007/2008), Sci Club Padova (2008/2009), Sci Club Panarotta (2009-2011), Ski Team Paganella (2013/2014), Campiglio Ski Team (2016/2017).
2002-2007	**Ski athlete**
	Italy
	Participating in many international competitions. See a sample list of records.

Sport Certificates

2011	**Ski Master Instructor**
	Milan, Italy
	Certificate
	Organization: FISI, CoScuMa
2011	**Ski Coach (3° level)**
	Milan, Italy
	Certificate
	Organization: FISI, STF
2007	**Ski Instructor**
	Trento, Italy
	Certificate
	Organization: PAT