

Marco Ciccone

PERSONAL INFORMATION

Surname: Ciccone
Name: Marco
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RESEARCH INTERESTS

Deep Learning, Information Geometry, Meta-Learning, Game Theory,
Unsupervised Learning, Optimization, Computer Vision.

EDUCATION

Politecnico di Milano, Italy

PhD in Computer Science and Engineering

3rd year

“Robustness and Stability of Deep Neural Networks”

Advisor: Prof. Matteo Matteucci

I’m both interested in applied and theoretically grounded research. I’ve mostly worked on deep learning models for image and video scene understanding. More recently I focused my research on the study of properties and invariance of deep neural networks, in particular stability and robustness to noise and adversarial perturbations. My main research at the moment is about:

- Continual Learning and Multi-agents systems
- Defense against Adversarial Attacks
- Information Geometry of Deep Neural Networks

Romanian Institute of Science and Technology, Cluj-Napoca, Romania

Visiting PhD student, advised by PhD Luigi Malago’

“Information Geometry of Adversarial Robustness of Neural Networks”

Politecnico di Milano, Italy

MSc in Computer Science and Engineering

April 2016

- Thesis: *“Pixelwise Semantic Segmentation of urban scenes using Recurrent Deep Neural Networks”*
- Advisors: Prof. Matteo Matteucci, Phd Francesco Visin
- Language: English
- Grade: *110/110 cum Laude*
- GPA: *28.85/30*

Università degli Studi di Firenze, Italy

B.Sc. in Computer Engineering

July 2013

- Thesis: “*Blind Source Separation methods for multichannel audio signals based on Independent Component Analysis*”
- Advisor: Prof. Fabrizio Argenti
- Language: Italian
- Grade: 97/110

PUBLICATIONS

- [1] **M. Ciccone**, M. Gallieri, J. Masci, C. Osendorfer, and F. Gomez, “Nais-net: Stable deep networks from non-autonomous differential equations,” in *Advances in Neural Information Processing Systems 32 (NIPS)*, 2018
- [2] M. Cannici, **M. Ciccone**, A. Romanoni, and M. Matteucci, “Attention mechanisms for object recognition with event-based cameras,” *Winter Conference on Applications of Computer Vision (WACV)*, 2019
- [3] F. Lattari, **M. Ciccone**, M. Matteucci, J. Masci, and F. Visin, “Reconvnet: Video object segmentation with spatio-temporal features modulation,” *The 2018 DAVIS Challenge on Video Object Segmentation - CVPR Workshops*, 2018
- [4] A. Romanoni, **M. Ciccone**, F. Visin, and M. Matteucci, “Multi-view stereo with single-view semantic mesh refinement,” in *IEEE International Conference on Computer Vision (ICCV)*, pp. 706–715, 2017
- [5] F. Visin, **M. Ciccone**, A. Romero, K. Kastner, C. Kyunghyun, Y. Bengio, M. Matteucci, and A. Courville, “ReSeg : A Recurrent Neural Network-based Model for Semantic Segmentation,” in *IEEE Conference on Computer Vision and Pattern Recognition Workshops (CVPRW)*, 2016
Best paper award DeepVision Workshop at CVPR2016

PREPRINTS

- [1] M. Cannici, **M. Ciccone**, A. Romanoni, and M. Matteucci, “Event-based convolutional networks for object detection in neuromorphic cameras,” *arXiv preprint arXiv: 1805.07931*, 2018

ACADEMIC
EXPERIENCE

Deep Learning 2017/2018, Prof. Matteo Matteucci

PhD and MSc Course at Politecnico di Milano

Teaching Assistant

February 2018

- Tensorflow and Pytorch Tutorial
- Advanced Convolutional Neural Networks

Cognitive Robotics 2016/2017, Prof. Matteo Matteucci

MSc Course at Politecnico di Milano

Teaching Assistant

June 2017

- Deep Learning Introduction
- From Linear Models to Deep Neural Networks
- Convolutional Neural Networks
- Recurrent Neural Networks

CONFERENCES AND COURSES	Transylvanian Machine Learning Summer School 2018 , Cluj, Romania <i>Acceptance Rate: 8%</i> 16-22 July 2018
	Machine Learning Summer School 2017 , Tübingen, Germany <i>Acceptance Rate: 13%</i> 19-30 June 2017
	International Computer Vision Summer School 2017 , Sicily, Italy <i>Acceptance Rate: 35%</i> 9-15 July 2017
	International Conference on Acoustics, Speech, and Signal Processing ICASSP 2014 , Florence, Italy <i>Staff volunteer</i> 4-9 May 2014 Attended tutorials : <ul style="list-style-type: none"> – Informed Audio Source Separation: Trends, Approaches and Algorithms – Deep learning for natural language processing and related applications
PROFESSIONAL EXPERIENCE	NVIDIA , Santa Clara, California <i>Research Intern</i> August 2018 - November 2018 Project on adversarial robustness of Neural Networks.
	NNAISENSE , Lugano, Switzerland <i>Research Intern</i> July 2017 - January 2018 I spent 7 months as research intern at NNAISENSE tutored by Jonathan Masci and Marco Gallieri. In this time I worked on stability and robustness of Residual Networks from a control theory perspective.
	Horus Technology , Milan, Italy <i>Machine Learning Engineer</i> June 2016 - June 2017 Horus Technology is an Italian start-up (recently rebranded as Eyra) that operates in the field of Artificial Intelligence. Its first product, Horus, is a wearable device that aims to assist blind and visually impaired people thanks to state-of-the-art computer vision technology. During my time here, I worked on deep learning models for Object Recognition and Scene Analysis to be deployed on a low power embedded system based on NVIDIA TK1.
	Projest S.p.A. , Prato, Italy <i>IT Consultant - Software Engineer</i> Nov 2009 - Oct 2012 I carried out several consulting projects as IT consultant for Guccio Gucci S.p.A., Gucci Logistica S.p.A. and other clients.
LANGUAGES AND CERTIFICATES	English: Highly proficient in spoken and written English Italian: Native speaker French: Basic communication skills