Matteo Tiezzi– Curriculum Vitae

Personal Information

Nationality	Italian
Date of Birth	3^{rd} October 1991
Voice (Mobile)	***
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	`http://mtiezzi.github.io/`
	`http://sailab.diism.unisi.it/people/matteo-tiezzi/`
	`https://github.com/mtiezzi/`
	`www.linkedin.com/in/mtiezzi`

Current Position

2020 - now **Research Fellow**, Information Engineering - Artificial Intelligence and Machine Learning
University of Siena, Italy
Advisor Prof. Stefano Melacci

Research

I am generally interested in Artificial Intelligence, Machine learning, and other connected areas of computer science. In particular I'm delving into the application of Deep Learning models to sequence and video analysis, and fundational studies regarding novel learning algorithms and neural models. I am currently working in the development of visual agents able to process and learn from a continuous stream of data (*Learning in Visual Environments)*. This approach rises from the conjuction of several notions, such as the Principle of Cognitive Action, Motion Invariance, Focus of Attention and Information Theory, in order to develop robust visual features and devise a Lifelong Learning scheme. My recent contributes are related to foundational studies on novel learning algorithms based on constraint-based optimization (*Constraint-based Neural Networks*). Moreover, my interests include the emerging field of non-euclidean Deep Learning, in particular Graph Neural Networks. I proposed a novel model, based on a constraint-based approach and solved with a Lagrangian formulation, to foster the Information diffusion in Graph Neural Networks.

Education

2017- 2020 **Ph.D. in Information Engineering**, Artificial Intelligence and Machine Learning (excellent with honours)
University of Siena, Italy
Advisor Prof. Marco Maggini

2017 **M.Sc.**, Computer and Automation Engineering (Information Systems), final mark 110/110 cum Laude (full marks with honors)
Advisor Prof. Marco Maggini
Thesis:
Traffic events monitoring with recurrent neural networks

2014 **B.Sc.**, Computer and Information Engineering, final mark 108/110
Advisor Prof. Marco Maggini
Thesis:
Estrazione automatica di informazioni salienti da pagine Web con XPath

(Automatic extraction of relevant information from Web pages using XPath)

2010 Liceo Scientifico F. Redi - Arezzo, (AR) Italy, final mark 95/100
High school certificate of education ("Maturità Scientifica")

Academic Experience

2021 Graph Neural Networks and Neural-Symbolic Computation,
PhD and Master student lecture for MAASAI, Universíte Coťe d'Azur and Pegaso PhD students,
UNIFI (Florence, Italy)
Course assistant, seminar, lecturer and organization of the laboratory session

2021 Graph Neural Networks and Neural-Symbolic Computation,
Deep Learning Summer School @ UCA, Nice, France
Course assistant, seminar, lecturer and organization of the laboratory session

Publications - International Journals

2020 M. Tiezzi, G.Marra, S. Melacci, M. Maggini:
Deep Constraint-based Propagation in Graph Neural Networks

IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI)**

Publications - International Conferences

2022 S. Marullo, M. Tiezzi, M. Gori, S. Melacci
Being Friends Instead of Adversaries: Deep Networks Learn from Data Simplified by Other Networks

2022 AAAI Conference on Artificial Intelligence (**AAAI 2022)**

2021 E. Meloni, A. Betti, L. Faggi, S. Marullo. M. Tiezzi, S. Melacci
Evaluating Continual Learning Algorithms by Generating 3D Virtual Environments

CSSL@IJCAI 2021 International Workshop on Continual Semi-Supervised Learning (**CSSL 2021)**

2021 E. Meloni, M. Tiezzi, L. Pasqualini, M. Gori, S. Melacci
Messing Up 3D Virtual Environments: Transferable Adversarial 3D Objects

20th IEEE International Conference on Machine Learning and Applications (**ICMLA 2021)**

2021 S. Marullo, M. Tiezzi, M. Gori, S. Melacci
Friendly Training: Neural Networks Can Adapt Data To Make Learning Easier

2021 International Joint Conference on Neural Networks (**IJCNN 2021)**

2020 E. Meloni, L. Pasqualini, M. Tiezzi, M. Gori, S. Melacci
SAILenv: Learning in Virtual Visual Environments Made Simple

International Conference on Pattern Recognition 2020 (**ICPR 2020)**

2020 M. Tiezzi, S. Melacci, A.Betti, M. Maggini, M. Gori:
Focus of Attention Improves Information Transfer in Visual Features

Thirty-fourth Conference on Neural Information Processing Systems (**Neurips 2020)**

2020 M. Tiezzi, G.Marra, S. Melacci, M. Maggini:
Deep Lagrangian Propagation in Graph Neural Networks

Graph Representation Learning and Beyond, ICML 2020 Workshop (**GRL+)**

2020 M. Tiezzi, G.Marra, S. Melacci, M. Maggini, M. Gori:
A Lagrangian Approach to Information Propagation in Graph Neural Networks

European Conference on Artificial Intelligence (**ECAI 2020)**

2020 A. Zugarini, M. Tiezzi, M. Maggini:
Vulgaris: Analysis of a Corpus for Middle-Age Varieties of Italian Language

VarDial@COLING 2020. - **VarDial2020)**

2020 M. Tiezzi, G.Marra, S. Melacci, M. Maggini, M. Gori:
Lagrangian Propagation Graph Neural Network

AAAI 2020 W8S Workshop (Deep Learning on Graphs: Methodologies and Applications - **DLGMA'20)**

2020 G.Marra, M. Tiezzi, S. Melacci, A.Betti, M. Maggini, M. Gori:
Local Propagation in Constraint-based Neural Networks

International Joint Conference on Neural Networks (**IJCNN2020)**

2018 M. Tiezzi, S. Melacci, M. Maggini, A. Frosini:
Video Surveillance of Highway Traffic Events by Deep Learning Architectures

International Conference on Artificial Neural Networks (**ICANN2018) , 584-593**

2018 A. Rossi, M. Tiezzi, GM. Dimitri, M. Bianchini, M. Maggini, F. Scarselli :
Inductive–Transductive Learning with Graph Neural Networks

IAPR Workshop on Artificial Neural Networks in Pattern Recognition (**ANNPR2018), 201-212**

Attended Conferences and Workshops

Dec. 2020 Thirty-fourth Conference on Neural Information Processing Systems (**Neurips 2020)**

Aug. 2020 European Conference on Artificial Intelligence (**ECAI 2020)**

July 2020 Graph Representation Learning and Beyond, ICML 2020 Workshop (**GRL+)**

Feb.2020 Thirty-Fourth AAAI Conference on Artificial Inteligence (AAAI2020)
Deep Learning on Graphs: Methodologies and Applications - DLGMA'20,
New York (USA)

Oct. 2018 International Conference on Artificial Neural Networks,
Rhodes (Greece)

June 2019 Summer School on Optimization, Big Data and Applications (OBA Summer School)
Veroli (Italy)

July 2019 Organizer and Speaker at the ACDL Satellite Workshop on Graph Neural Networks,
Siena (Italy)

Oct. 2019 Speaker at LinuxDay and Artificial Intelligence @ SIENA 2019,
Siena (Italy)

Peer-Reviewer

International Conferences

International Conference on Pattern Recognition, ICPR 2022

AAAI 2021 Program Commitee Member (PC)

International Conference on Artificial Neural Networks, ICANN 2019

Journals

- IEEE Transactions on Neural Networks and Learning Systems, TNNLS
- Transactions on Knowledge and Data Engineering, TKDE
- Artificial Intelligence Journal
- Knowledge-Based Systems, KNOSYS
- Elsevier Neurocomputing
- Computational and Structural Biotechnology Journal
- AI Open (Open Access)

Grants and Awards

- **[2016] Recurrent neural networks for vehicle traffic event and state monitoring, DIISM and IsTech s.r.l.** scholarship
- **[2017] Three years Ph.D. Scholarship at Department of Information Engineering, University of Siena, ITALY**
- **[2017] Premio Matteo Lanzoni 2017 (Matteo Lanzoni Prize), Best thesis on road safety**
- **[2018] SoBigData Soccer Data Challenge, Oct. 2018, member of the winning team**
- **[2022] Special Mention for the prize "Marco Cadoli" for the best PhD thesis on Artificial Intelligence,** held by the AIxIA (Associzaione Italiana per l'Intelligenza Artificiale - Italian Association for AI).

Supervision of Students

- **[2018] Co-advisor for the B.Sc. Thesis "Experimentation on Real Video of Systems for Object Detection"** by Giulio Campagna
- **[2022] Co-advisor for the M.Sc. Thesis "Aggregation Functions in Graph Neural Networks"** by Faezeh Amou Najafabadi

Internships

July 2016 - Jan. 2017 DIISM Siena - isTech S.r.l , Pistoia
I won a scholarship for a research internship at Dipartimento di Ingegneria dell'Informazione e Scienza Matematiche di Siena and IsTech s.r.l regarding the implantation and validation of a prototype system for vehicle traffic events monitoring, using recurrent neural networks.

June 2014 - Nov. 2014 QuestIt S.r.l , Siena
Analysis and information extraction from web pages
Use of XPath to extract relevant information from web pages as input to MySnooper service.

Computer skills

Operating Systems Operating Systems: Windows (all versions), Linux (various distros, mainly Ubuntu)
Languages C, C++, HTML, CSS, XPath, XML, Python

Development Env.	Microsoft Visual Studio, Pycharm, NetBeans
Applications	Microsoft Office, OpenOffice, Gimp, LaTeX, Sony Vegas
Misc	Experience and knowledge of PC components, peripherals and networking.

Languages

Italian (mother tongue)
English (very good reading/writing skills, good oral skills)
Cambridge PET certification obtained (final score: Pass with Merit)
B2 English eligibility obtained during the M.S.