






Simone SCARDAPANE, Ph.D.

PERSONAL DATA



PLACE AND DATE OF BIRTH: Rome | 28 October 1988
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RESEARCH EXPERIENCE

- FEB 2019-CURRENT  Assistant Professor at **La Sapienza, Rome**
Research on deep learning architectures, compression, and regularization. Lecturer for *Neural Networks for Data Science Applications* (Data Science) and *TensorFlow for ICT Applications* (doctoral course).
- AUG 2016-JAN 2019  Postdoctoral Fellow at **La Sapienza, Rome**
Research on algorithms for training deep neural networks, distributed semi-supervised strategies, and audio applications. Partially co-funded by **KPMG Advisory International**.
Advisor: Prof. Aurelio UNCINI (aurel@ieee.org)
- FEB 2017-JUL 2017  Lecturer at **Perugia University, Perugia**
Lecturer for the course on *Data Mining and Machine Learning*, held inside the **Master in Data Science** (<http://masterds.unipg.it/>).
- SEP 2015-DEC. 2018  Honorary Research Fellow at **Stirling University, Scotland (UK)**
Fellow of the Cognitive Big Data Informatics (CogBID) laboratory, for research on recurrent neural networks and distributed learning.
Advisor: Prof. Amir HUSSAIN (ahu@cs.stir.ac.uk)
- SEP 2014-JAN 2015  Honorary Visiting Student at **La Trobe University, Melbourne**
Development of novel distributed supervised learning algorithms for decentralized big data applications.
Advisor: Prof. Dianhui WANG (dh.wang@latrobe.edu.au)

EDUCATION

- OCT 2012-MAY 2016  Doctor of Philosophy at **La Sapienza, Rome**
PhD in Information and Communication Technology
Distributed machine learning, big data classification, intelligent audio processing. Teaching assistant for the courses of “Neural Networks” and “Adaptive Filtering and Parallel Computing”.
Advisor: Prof. Aurelio UNCINI (aurel@ieee.org)
- SEP 2009-SEP 2010  Master degree at **La Sapienza, Rome** | MARK: 110/110 *magna cum laude*
Master Degree in Artificial Intelligence and Robotics
Thesis: “Chaotic Series Prediction using Kernel Adaptive Filtering Techniques”,
Advisor: Prof. Aurelio UNCINI
- JUL 2010  Summer School at **Tohoku University, Sendai (Japan)**
Engineering Summer Program 2010 - Robotics
Two weeks of lectures on Rescue Robotics, Humanoid Robotics, Space Robotics, Robotics Locomotion and other robotic topics.
- SEP 2006-SEP 2009  Bachelor degree at **Roma Tre University, Rome**
MARK: 110/110 *magna cum laude*
Bachelor in Computer Engineering
Thesis: “Operators for the translation of schemas and instances in a model management framework”, Prof. Paolo ATZENI

WORK EXPERIENCE

MAY 2018-JUL 2018



AI / Machine Learning Coach at PI SCHOOL, Rome

Mentoring and teaching for the 8-week School of AI program: <http://picampus-school.com/programme/school-of-ai/>.

DEC 2013-JAN 2014



Occasional Collaborator at UNIVERSITY LA SAPIENZA OF ROME

Development of algorithms for classification of audio data in an outdoor, unstructured scenario. The work took place in the context of the "Smartoptigrid" project between La Sapienza and Intecs S.p.A., funded by the Italian Ministry of Defence.

Nov 2011-OCT 2012



Software Developer at 5 EMME INFORMATICA SPA, Rome

Software developer (mostly PHP and .NET), for multiple projects involving e-commerce, SLA management, and medical tracking.

OTHER ACTIVITIES

DEC 2017-PRESENT



Co-founder of ITALIAN ASSOCIATION FOR MACHINE LEARNING

A no-profit to foster the development of ML in all sectors of the public life, by organizing, promoting, and sponsoring technical conferences, events, Meetups, and other initiatives throughout Italy.

DEC 2016-PRESENT



Co-organizer of ROME MACHINE LEARNING & DATA SCIENCE MEETUP

We organize monthly meetups on machine learning and data science topics, laboratories, and other activities for developers and enthusiasts.

DEC 2016-PRESENT



Program committee for CODEMOTION

Codemotion is a leading organizer in tech conferences in Europe. As a member of the Program Committee (ex advisory board), I help in the definition and organization of the ML track in Codemotion Rome and Codemotion Milan.

AWARDS

APR. 2020



Faculty Award to Support Machine Learning Courses from GOOGLE

An award to help design and develop state-of-the-art machine learning courses exploiting TensorFlow.

DEC. 2017



Google Developer Expert for ML from GOOGLE

The Experts Program title recognizes the outstanding developers who exhibit great expertise in one or more Google technologies and share it with the developer community, as well as exceptional professionals in product strategy, UX/UI, marketing, growth hacking, monetization and data analysts.
- <https://developers.google.com/experts/>.

SEPT. 2013



Excellent Graduate, Year 2011-2012 from FONDAZIONE LA SAPIENZA

A prize for students who have distinguished themselves for academic or other merits.

SEPT. 2015






Avvio alla Ricerca from SAPIENZA UNIVERSITY OF ROME

Funding (reserved to young researchers) for the project "Algoritmi non-lineari per l'apprendimento su reti di agenti".

OTHER RESEARCH ACTIVITIES

APRIL 2020	Member - Machine learning in geodesy joint study group of the International Association of Geodesy .
AUGUST 2019	Member - IEEE CIS Social Media Sub-Committee and IEEE Task Force on Reservoir Computing .
AUGUST 2019	Vice-chair - Statistical Pattern Recognition Techniques TC of the International Association for Pattern Recognition .
MAY 2019	Co-organizer - 1st and 2nd International Workshops on Reservoir Computing (ICANN 2019/2020)
JAN 2016 - Present	Associate editor - Cognitive Computation (Springer) and Big Data Analytics (Springer)
2017-2018	Social media co-chair for the 2018 and 2020 World Congress on Computational Intelligence .
2016-2017	Publicity co-chair for the 2017 International Joint Conference on Neural Networks , the 18th International Conference on Engineering Applications of Neural Networks , and the first four editions of the INNS Conference on Big Data and Deep Learning .
2016	Guest editor for the special issues on “ <i>Advances in Biologically Inspired Reservoir Computing</i> ” and “ <i>Trends in Reservoir Computing</i> ” published on Cognitive Computation
JUL. 2016	Co-organizer of the special session on “ <i>Distributed Learning Algorithms for Neural Networks</i> ” at the 2016 International Joint Conference on Neural Networks .
2014 - Current	External reviewer for IEEE Transactions on Neural Networks and Learning Systems , IEEE Transactions on Cybernetics , IEEE Computational Intelligence Magazine , Information Sciences , Neural Networks , Expert Systems with Applications , Soft Computing , Applied Soft Computing , Cognitive Computation , Neurocomputing , Conference on Neural Information Processing Systems , International Conference on Machine Learning .

LANGUAGES

ITALIAN:		Mothertongue
ENGLISH:		Professional proficiency
FRENCH:		Fluent (lived for 9 years in Paris and Brussels)

SELECTED RECENT PUBLICATIONS (2018-2020)

JOURNALS

- Pomponi J., Scardapane S., Lomonaco V., & Uncini A. (2020). [Efficient Continual Learning in Neural Networks with Embedding Regularization](#). *Neurocomputing*, in press.
- Scardapane, S., Van Vaerenbergh, S., Hussain, A., & Uncini, A. (2020). [Complex-valued Neural Networks with Non-parametric Activation Functions](#). *IEEE Transactions on Emerging Topics in Computational Intelligence*, pp. 4(2), 140-150.
- Baccarelli, E., Scardapane, S., Scarpiniti, M., Momenzadeh, A., & Uncini, A. (2020). [Optimized Training and Scalable Implementation of Conditional Deep Neural Networks with Early Exits for Fog-supported IoT applications](#). *Information Sciences*, in press.
- Totaro, S., Hussain, A., & Scardapane, S. (2020). [A Non-parametric Softmax for Improving Neural Attention in Time-Series Forecasting](#). *Neurocomputing*, 381, pp. 177-185.
- Scardapane, S., Van Vaerenbergh, S., & Uncini, A. (2019). [Kafnets: kernel-based non-parametric activation functions for neural networks](#). *Neural Networks*, 110, pp. 19-32.
- Scardapane, S., & Di Lorenzo, P. (2018). [Stochastic Training of Neural Networks via Successive Convex Approximations](#). *IEEE Transactions on Neural Networks and Learning Systems*, 29(10), 4947 – 4956.
- Scardapane, S., Wang, D. & Uncini, A. (2018). [Bayesian Random Vector Functional-Link Networks for Robust Data Modeling](#). *IEEE Transactions on Cybernetics*, 48(7), 2049-2059.

PROCEEDINGS

- Di Lorenzo, P., & Scardapane, S. (2020). [Distributed Stochastic Nonconvex Optimization and Learning based on Successive Convex Approximation](#). In *Proceedings of the 2019 Asilomar Conference on Signals, Systems, and Computers*, (pp. 1-5). IEEE.
- Scardapane, S., Comminiello, D., Scarpiniti, M., Baccarelli, E., & Uncini, A. (2020). [Differentiable Branching In Deep Networks for Fast Inference](#). In *Proceedings of the 2020 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, (pp. 1-5). IEEE.
- Falvo, A., Comminiello, D., Scardapane, S., Scarpiniti, M., & Uncini, A. (2019). [A Multimodal Dense U-Net For Accelerating Multiple Sclerosis MRI](#). In *Proceedings of the 2019 IEEE Machine Learning for Signal Processing Workshop (MLSP)*, (pp. 1-6). IEEE.
- Scardapane, S., Van Vaerenbergh, S., Comminiello, D., & Uncini, A. (2018). [Improving Graph Convolutional Networks with Non-Parametric Activation Functions](#). In *Proceedings of the 2018 26th European Signal Processing Conference (EUSIPCO)*, (pp. 872-876). IEEE.
- Communiello, D., Scarpiniti, M., Scardapane, S., Azpicueta-Ruiz, L. A., & Uncini, A. (2018). [Combined Sparse Regularization for Nonlinear Adaptive Filters](#). In *Proceedings of the 2018 26th European Signal Processing Conference (EUSIPCO)*, (pp. 336-340). IEEE.
- Scardapane, S., Van Vaerenbergh, S., Comminiello, D., Totaro, S., & Uncini, A. (2018). [Recurrent Neural Networks with Flexible Gates using Kernel Activation Functions](#). In *Proceedings of the 2018 IEEE Machine Learning for Signal Processing Workshop (MLSP)*, (pp. 1-6). IEEE.

CHAPTERS

- [B2] Communiello, D., Scarpiniti, M., Scardapane, S., Parisi, R. & Uncini, A. (2016). [A Nonlinear Acoustic Echo Canceller with Improved Tracking Capabilities](#). In *Recent Advances in Nonlinear Speech Processing* (pp. 235-243). Springer International Publishing.
- [B1] Scardapane, S., Communiello, D., Scarpiniti, M., Parisi, R., & Uncini, A. (2013). [PM10 Forecasting Using Kernel Adaptive Filtering: An Italian Case Study](#). In *Neural Nets and Surroundings* (pp. 93-100). Springer Berlin Heidelberg.

Autorizzo al trattamento dei miei dati per le finalità dell'Avviso in conformità all'Informativa Privacy di cui all'Appendice 5 dell'Avviso.

Signature:
Simone Scardapane