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Europass Curriculum Vitae

Personal information

Surname(s) / First name(s)	**Simone Scardapane**

Education and training

Dates (From - to)	November 2012 - November 2016
University	Sapienza University of Rome Ph.D. in Information and Communication Technologies
Topics	Algorithms for training neural networks in distributed contexts (advisor: Prof. Aurelio Uncini). **Title of the thesis**: *Distributed Supervised Learning using Neural Networks*.
Dates (From - to)	October 2014 - January 2015
University	La Trobe University (Melbourne) Honorary Visiting Ph.D. Student
Topics	Development of distributed supervised learning algorithms for big data applications (advisor: Prof. Dianhui Wang).
Dates (From - to)	September 2009 - September 2011
University	Sapienza University of Rome, Master Degree in Artificial Intelligence and Robotics
Thesis	*Chaotic Series Prediction using Kernel Adaptive Filtering Techniques* (advisor: Prof. Aurelio Uncini).
Final mark	110/110, *magna cum laude*
Dates (From - to)	July 2010 - July 2010
University	Tohoku University (Sendai, Japan), Engineering Summer Program 2010 - Robotics
Activites	Two weeks of lectures on Rescue Robotics, Humanoid Robotics, Space Robotics, Robotics Locomotion and other robotic topics.
Dates (From - to)	September 2006 - September 2009
University	University of Rome “Roma Tre”, Bachelor in Computer Engineering
Thesis	*Operators for the translation of schemas and instances in a model management framework* (advisor: Prof. Paolo Atzeni).
Final mark	110/110, *magna cum laude*

Research experience

Dates (From - to)	May 2016 - Present
University	Sapienza University of Rome, Post-doctoral fellow
Subject	Research on deep learning and distributed learning and inference (with an emphasis on neural networks).
Dates (From - to)	September 2015 - Present

University	Stirling University, Honorary Research Fellow - Cognitive Big Data Informatics (CogBID) Laboratory
Subject	Research on distributed recurrent neural networks (advisor: Prof. Amir Hussain).

Teaching experience

Dates (From - to)	March 2017 - June 2017
University	Perugia University, Master in Data Science
Course	Contract lecturer for the course “Data Mining and Machine Learning” (6 CFU). The course introduced the basic elements of supervised and unsupervised machine learning algorithms.

Dates (From - to)	November 2012 - Present
University	Sapienza University of Rome
Course	Teaching assistant for:

- “Neural Networks”, Master Degree in Artificial Intelligence and Robotics, Prof. Aurelio Uncini, years 2012-2017.
- “Machine Learning for Signal Processing”, Master Degree in Electronic Engineering, Prof. Danilo Comminiello, year 2018.
- “Algoritmi Adattativi e Calcolo Parallelo”, Master Degree in Communication Engineering, Prof. Aurelio Uncini, years 2015-2017.
- “Algoritmi Adattativi e Machine Learning”, Master Degree in Communication Engineering, Prof. Aurelio Uncini, year 2018.
- “Laboratorio per l’Elaborazione Multimediale”, Master Degree in Communication Engineering, Prof. Michele Scarpiniti, years 2013-2014.
- “Circuiti ed Algoritmi per l’Elaborazione del Segnale”, Master Degree in Communication Engineering, Prof. Aurelio Uncini, year 2013.

Research Projects

Dates	2015 - 2016
Description	Avvio alla Ricerca (Sapienza University of Rome), for the project “Algoritmi non-lineari per l’apprendimento su reti di agenti”.

Dates	2016 - 2017
Description	Collaboration between DIET department and KPMG Advisory for working on big data projects for selected clients.

Dates	2017 - 2019
Description	GAUChO Project, Progetti di Ricerca di Rilevante Interesse Nazionale (PRIN), Grant 2015YPXH4W_004.

Additional work experience

Dates	June 2015 - Present
Role	Freelance speaker and consultant
Description	Organization of several one-day workshops on machine learning and deep learning, with a focus on TensorFlow and Python libraries (e.g., for Codemotion, LUISS EnLabs, LVenture Group).

Dates	December 2013 - January 2014

Company: Sapienza University of Rome (Occasional Collaborator)

Description: Development of software modules for the 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.

Dates: November 2011 - October 2012

Company: 5 Emme Informatica SpA (Software Developer)

Description: Software development for several projects, including an e-commerce platform, a regional research project on medical retention of gauze pads, and two major telecommunication providers.

Other academic activities

Conferences organization

- Publicity co-chair: 1st INNS Conference on Big Data (San Francisco, US), 2nd INNS Conference on Big Data (Thessaloniki, Greece).
- Publicity co-chair: 2017 International Joint Conference on Neural Networks (Anchorage, Alaska).
- Publicity co-chair: 18th International Conference on Engineering Applications of Neural Networks (Athens, Greece).
- Publicity co-chair: 3rd INNS Conference on Big Data and Deep Learning (Bali, Indonesia).
- Publicity co-chair: 14th International Conference on Artificial Intelligence Applications and Innovations (Rhodes, Greece).
- Social media co-chair: 2018 IEEE World Congress on Computational Intelligence (Rio De Janeiro, Brazil).

Editorial roles

- Associate editor for Cognitive Computation (Springer, January 2016 onwards).
- Guest editor of the special issue on *New Developments on Randomized Algorithms for Neural Networks* (Information Sciences, ongoing).
- Guest editor for the special issue on *Advances in Biologically Inspired Reservoir Computing*, (Cognitive Computation, 2017).

Special sessions

- *Advances in Reservoir Computing*, IEEE IJCNN 2018 (Rio De Janeiro, Brazil).
- *Distributed Learning Algorithms for Neural Networks*, IEEE IJCNN 2016 (Vancouver, Canada).

Speaking activities

International conferences

- 22nd Italian Workshop on Neural Networks (2012).
- 36th International Conference on Telecommunications and Signal Processing (TSP, 2013).
- 23rd Italian Workshop on Neural Networks (2013).
- 134th Audio Engineering Society Convention (2013).
- 2014 IEEE Congress on Evolutionary Computation (CEC).
- 2014 IEEE International Joint Conference on Neural Networks (IJCNN).
- 24th Italian Workshop on Neural Networks (2014).
- 25th Italian Workshop on Neural Networks (2015).
- 24th European Signal Processing Conference (EUSIPCO, 2016).
- 2016 IEEE International Workshop on Machine Learning for Signal Processing (MLSP).
- 5th Italian Workshop on Machine Learning and Data Mining (2016).
- 2017 IEEE International Joint Conference on Neural Networks (IJCNN, 2017).
- 6th Italian Workshop on Machine Learning and Data Mining (2017).

Invited seminars

- University of Exeter (Exeter, 2018): "Compressing deep neural networks: Challenges and theoretical foundations."
- Roma Tre University (Rome, 2017): "Learning over networks with non-convex cost functions."
- Università Campus Bio-Medico (2014): "Sinergie Uomo-Macchina nel Processo Creativo".

Other conferences (selected)

- Codemotion 2012 (Rome): selected talk on "How to Make Smarter Programs: a Gentle Introduction to Machine Learning".
- Google Cloud Dev Conference 2013 (Rome): invited talk on "Google Prediction API".
- Data Driven Innovation Open Summit (Rome, 2016): selected talk on "Big Data e Deep Learning".
- Data Driven Innovation Open Summit (Rome, 2017): selected talk on "Il deep learning ed una nuova generazione di AI".
- Codemotion Rome (2017): selected talk on "From a Developer's POV: is Machine Learning Reshaping the World?".
- Codemotion Milan (2017): selected talk on "The dark side of deep learning".
- Converge Conference (Google / Frog Design, Milan, 2018): invited talk on "Il lato oscuro del deep learning".
- TensorFlow Dev Summit 2018 (Mountain View): invited guest from Google.

Other activities

Description

- Founder and president of the Italian Association for Machine Learning (a no-profit association for promoting machine learning in Italy).
- Member of the program committee for Codemotion (lead organizer of technical conferences in Europe).
- Technical mentor for the School of Artificial Intelligence of Pi Campus (http://picampus-school.com/programme/school-of-ai/).
- Track Director, Advanced School in AI, CNR (https://as-ai.org/).

Awards, Grants, and Certifications

Title: Google Developer Expert for Machine Learning (Google)

Description: A Google program for recognizing and supporting "*experienced, recognized developers of Google technologies as well as outstanding professionals*" (https://developers.google.com/experts/).

Title: Excellent Graduate, Year 2011-2012 (Fondazione La Sapienza)

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

Personal Skills and Competences

Mother tongue(s): **Italian**

Other languages: English, French

Self-assessment *European level*(*)

	Understanding		Speaking		Writing
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C2	C1
French	C2	C2	C1	C2	C1

(*) *Common European Framework of Reference (CEF) level*

Publications

Journals

[J1] Scardapane, S., and Di Lorenzo, P. (2018). Stochastic Training of Neural Networks via Successive Convex Approximations. IEEE Transactions on Neural Networks and Learning Systems, in press.

[J2] Scardapane, S., Wang, D. and Uncini, A. (2018). Bayesian Random Vector Functional-Link Networks for Robust Data Modeling. IEEE Transactions on Cybernetics, 48(7), 2049–2059.

[J3] Scardapane, S. and Di Lorenzo, P. (2017). A Framework for Parallel and Distributed Training of Neural Networks. Neural Networks, 91, 42–54.

[J4] Scardapane, S., Butcher, J., Bianchi, F.M., and Malik, Z. (2017). Advances in Biologically Inspired Reservoir Computing [Guest Editorial]. Cognitive Computation, 9(3), pp. 295–296.

[J5] Scardapane, S., Comminiello, D., Hussain, A. and Uncini, A. (2017). Group Sparse Regularization for Deep Neural Networks. Neurocomputing, 241, pp. 81-89.

[J6] Scardapane, S. and Wang, D. (2017). Randomness in neural networks: an overview. WIREs Data Mining and Knowledge Discovery, 7(2), pp. 1-18.

[J7] Fierimonte, R., Scardapane, S., Uncini, A. and Panella, M. (2017). Fully Decentralized Semi-supervised Learning via Privacy-preserving Matrix Completion. IEEE Transactions on Neural Networks and Learning Systems, 28(11), pp. 2699-2711.

[J8] Scardapane, S. and Uncini, A. (2016). Semi-supervised Echo State Networks for Audio Classification. Cognitive Computation, 9(1), pp. 125-135.

[J9] Scardapane, S., Panella, M., Comminiello, D., Hussain, A. and Uncini, A. (2017). Distributed reservoir computing with sparse readouts. IEEE Computational Intelligence Magazine, 11(4), pp. 59-70.

[J10] Scardapane, S., Fierimonte, R, Di Lorenzo, P., Panella, M. and Uncini, A. (2016). Distributed semi-supervised support vector machines. Neural Networks, 80, pp. 43-52.

[J11] Scardapane, S., Wang, D., and Panella, M. (2016). A decentralized training algorithm for Echo State Networks in distributed big data applications. Neural Networks, 78, pp. 65-74.

[J12] Bianchi, F.M., Scardapane, S., Rizzi, A., Uncini, A., and Sadeghian, A. (2016). Granular Computing Techniques for Classification and Semantic Characterization of Structured Data. Cognitive Computation, 8(3), pp. 442-461.

[J13] Bianchi, F. M., Scardapane, S., Uncini, A., Rizzi, A., Sadeghian, A. (2015). Prediction of telephone calls load using Echo State Network with exogenous variables. Neural Networks, 71, pp. 204-213.

[J14] Scardapane, S., Comminiello, D., Scarpiniti, M., and Uncini, A. (2016). A Semi-supervised Random Vector Functional-Link Network based on the Transductive Framework. Information Sciences, 364-365, pp. 156–166.

[J15] Scardapane, S., Scarpiniti, M., Bucciarelli, M., Colone, F., Mansueto, M. V., and Parisi, R. (2015). Microphone Array Based Classification for Security Monitoring in Unstructured Environments. AEU-International Journal of Electronics and Communications, 69(11), pp. 1715-1723.

[J16] Comminiello, D., Scarpiniti, M., Scardapane, S., Parisi, R. and Uncini, A. (2015). Improving nonlinear modeling capabilities of functional link adaptive filters. Neural Networks, 69, pp. 51-59.

[J17] Scardapane, S., Wang, D., Panella, M. and Uncini, A. (2015). Distributed Learning for Random Vector Functional-Link Networks. Information Sciences, 301, pp. 271-284.

[J18] Scardapane, S., Comminiello, D., Scarpiniti, M. and Uncini, A. (2015). Online Sequential Extreme Learning Machine With Kernels. IEEE Transactions on Neural Networks and Learning Systems, 26(9), pp. 2214-2200.

Book Chapters

[B1] Scardapane, S., Chen, J., and Richard, C. (2018). Adaptation and learning over networks for nonlinear system modeling. In Adaptive Learning Methods for Nonlinear System Modeling, Eds. D. Comminiello and J.C. Principe (pp. 223–242). Elsevier Publishing.

[B2] Scardapane, S., Altilio, R., Ciccarelli, V., Uncini, A. and Panella, M. (2017). Privacy-Preserving Data Mining for Distributed Medical Scenarios. In Multidisciplinary Approaches to Neural Computing (pp. 119-128). Springer International Publishing.

[B3] Scarpiniti, M., Scardapane, S., Comminiello, D., Parisi, R. and Uncini, A. (2017). Effective Blind Source Separation Based on the Adam Algorithm. In Multidisciplinary Approaches to Neural Computing (pp. 57-66). Springer International Publishing.

[B4] Scardapane, S., Danilo, C., Scarpiniti, M., Parisi, R. and Uncini, A. (2016). Benchmarking Functional Link Expansions for Audio Classification Tasks. In Advances in Neural Networks: Computational Intelligence and ICT (pp. 133-141). Springer International Publishing.

[B5] Fierimonte, R., Scardapane, S., Panella, M., and Uncini, A. (2016). A Comparison of Consensus Strategies for Distributed Learning of Random Vector Functional-Link Networks. In Advances in Neural Networks: Computational Intelligence and ICT (pp. 143-152). Springer International Publishing.

[B6] Comminiello, D., Scarpiniti, M., Scardapane, S., Parisi, R., and 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.

[B7] Scardapane, S., Comminiello, D., Scarpiniti, M., and Uncini, A. (2015). Significance-Based Pruning for Reservoir's Neurons in Echo State Networks. In Advances in Neural Networks: Computational and Theoretical Issues (pp. 31-38). Springer International Publishing.

[B8] Comminiello, D., Scardapane, S., Scarpiniti, M., Parisi, R. and Uncini, A. (2015). Online Selection of Functional Links for Nonlinear System Identification. In Advances in Neural Networks: Computational and Theoretical Issues (pp. 39-47). Springer International Publishing.

[B9] Scardapane, S., Comminiello, D., Scarpiniti, M., and Uncini, A. (2014). A Preliminary Study on Transductive Extreme Learning Machines. In Recent Advances of Neural Network Models and Applications (pp. 25-32). Springer International Publishing.

[B10] Scarpiniti, M., Comminiello, D., Scardapane, S., Parisi, R., and Uncini, A. (2014). Proportionate Algorithms for Blind Source Separation. In Recent Advances of Neural Network Models and Applications (pp. 99-106). Springer International Publishing.

[B11] Scardapane, S., Comminiello, D., Scarpiniti, M., Parisi, R., and Uncini, A. (2013). PM10 Forecasting Using Kernel Adaptive Filtering: An Italian Case Study. In Neural Nets and Surroundings (pp. 93-100). Springer Berlin Heidelberg.

Conference Proceedings

[C1] Comminiello, D., Scarpiniti, M, Scardapane, S., and Uncini, A. (2018). Sparse Functional Link Adaptive Filter Using an ℓ1-Norm Regularization. In Proceedings of the 2018 IEEE International Symposium on Circuits and Systems (ISCAS) (pp. 1-5). IEEE.

[C2] Firmani, D., Merialdo, P., Nieddu, E., and Scardapane, S. (2017). In Codice Ratio: OCR of Handwritten Latin Documents using Deep Convolutional Networks. In Proceedings of the 11th International Workshop on Artificial Intelligence for Cultural Heritage (AI*CH 2017) (pp. 9-16). CEUR Workshop Proceedings.

[C3] Van Vaerenbergh, S., Scardapane, S., and Santamaria, I. (2017). Recursive Multikernel Filters Exploiting Nonlinear Temporal Structure. In 2017 25th European Signal Processing Conference (EUSIPCO'17), (pp. 2743-2747). Eurasip.

[C4] Scardapane, S., Stoffl, L., Röhrbein, F. and Uncini, A. (2017). On the Use of Deep Recurrent Neural Networks for Detecting Audio Spoofing Attacks . In 2017 International Joint Conference on Neural Networks (IJCNN), (pp. 3483-3490). IEEE.

[C5] Di Lorenzo, P. and Scardapane, S.. (2016). Parallel and Distributed Training of Neural Networks via Successive Convex Approximation. In 2016 IEEE International Workshop on Machine Learning for Signal Processing (MLSP), (pp. 1-6). IEEE.

[C6] Scardapane, S., Altilio, R., Panella, M. and Uncini, A. (2016). Distributed Spectral Clustering based on Euclidean Distance Matrix Completion. In 2016 International Joint Conference on Neural Networks (IJCNN), (pp. 3093-3100). IEEE.

[C7] Scardapane, S., Scarpiniti, M., Comminiello, D. and Uncini, A. (2016). Diffusion Spline Adaptive Filtering. In 2016 24th European Signal Processing Conference (EUSIPCO), (pp. 1498-1502). Eurasip.

[C8] Scardapane, S., Fierimonte, R., Wang, D., Panella, M. and Uncini, A. (2015). Distributed Music Classification Using Random Vector Functional-Link Nets. In 2015 International Joint Conference on Neural Networks (IJCNN), (pp. 1-8). IEEE.

[C9] Comminiello D., Scardapane, S., Scarpiniti, M., Parisi, R. and Uncini, A. (2015). Functional Link Expansions for Nonlinear Modeling of Audio and Speech Signals. In 2015 International Joint Conference on Neural Networks (IJCNN), (pp. 1-8). IEEE

[C10] Scardapane, S., Panella, M., Comminiello, D., and Uncini, A. (2015). Learning from Distributed Data Sources Using Random Vector Functional-Link Networks. Procedia Computer Science, 53, 468-477.

[C11] Scardapane, S., Nocco, G., Comminiello, D., Scarpiniti, M., and Uncini, A. (2014, July). An effective criterion for pruning reservoir's connections in Echo State Networks. In 2014 International Joint Conference on Neural Networks (IJCNN), (pp. 1205-1212). IEEE.

[C12] Scardapane, S., Comminiello, D., Scarpiniti, M., and Uncini, A. (2014, July). GP-based kernel evolution for L 2-Regularization Networks. In 2014 IEEE Congress on Evolutionary Computation (CEC), (pp. 1674-1681). IEEE.

[C13] Bianchi, F. M., Scardapane, S., Livi, L., Uncini, A., and Rizzi, A. (2014, July). An interpretable graph-based image classifier. In 2014 International Joint Conference on Neural Networks (IJCNN), (pp. 2339-2346). IEEE.

[C14] Scardapane, S., Comminiello, D., Scarpiniti, M., and Uncini, A. (2013, September). Music classification using extreme learning machines. In *IEEE 2013 8th International Symposium on Image and Signal Processing and Analysis (ISPA)*, pp. 377-381.

[C15] Comminiello, D., Scardapane, S., Scarpiniti, M., and Uncini, A. (2013, July). Interactive quality enhancement in acoustic echo cancellation. In IEEE 2013 36th Inte*rnational Conference on Telecommunications and Signal Processing (TSP)*, pp. 488-492.

[C16] Comminiello, D., Scardapane, S., Scarpiniti, M., Parisi, R., and Uncini, A. (2013, September). Convex combination of MIMO filters for multichannel acoustic echo cancellation. In 2013 8th International Symposium on Image and Signal Processing and Analysis (ISPA), (pp. 778-782). IEEE.