



Curriculum vitae

PERSONAL INFORMATION

Luca Romeo

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Researchgate: https://www.researchgate.net/profile/Luca_Romeo/researchGoogle Scholar: <https://scholar.google.it/citations?user=fRja-q0AAAAJ&hl=it>VRAI: <http://vrai.dii.univpm.it/luca.romeo>Scopus: <https://www.scopus.com/authid/detail.uri?authorId=56426855300>Orcid: <https://orcid.org/0000-0003-1707-0147>

WORK EXPERIENCE

December 2017 – present

PostDoc Researcher

Department of Information Engineering

Università Politecnica delle Marche, via Brecce Bianche 60121 Ancona (Italy)

December 2017 – present

Research fellow

Computational Statistics and Machine Learning Department and C'MON Unit

Istituto Italiano di Tecnologia via Morego 30, Genoa (GE), Italy

Sept 2019 – present

Lecture Position: Digital technologies and processes (Legal Statistics)

Department of Law

Università di Macerata (Italy)

January 2016 – June 2016

Substitute Teacher

Professional Institute High School "Antonio Guastaferrò"

San Benedetto del Tronto (Italy)

May 2014 – October 2014

Research fellow

Department of Information Engineering

Università Politecnica delle Marche, via Brecce Bianche 60121 Ancona (Italy)

EDUCATION

November 2014 – October 2017

PhD in Information Engineering

Department of Information Engineering, Università Politecnica delle Marche, via Brecce Bianche 60121 Ancona (Italy)

March 2017 – July 2017

PhD internship

Computational Statistics and Machine Learning Department and C'MON Unit, Istituto Italiano di Tecnologia via Morego 30, Genoa (GE), Italy

September 2011 – December 2013

Master of Science cum laude in Electronic and Telecommunication Engineering

Department of Information Engineering, Università Politecnica delle Marche, via Brecce Bianche 60121 Ancona (Italy)

February 2013 – June 2013

Erasmus Exchange period for Master Thesis

TU/eEindhoven University of Technology

September 2008 – October 2011

Bachelor Degree in Electronic Engineering

Department of Information Engineering, Università Politecnica delle Marche, via Brecce Bianche 60121 Ancona (Italy)

2003 – 2008

Electrical Diploma

Technical High School 'G. & M. Montani', Fermo, Italy

AWARD

Best student paper: Machine learning-based approaches to analyse and improve the diagnosis of endothelial dysfunction

2018 14th IEEE/ASME International Conference on Mechatronic and Embedded Systems and Applications (MESA)

Best paper award (2nd winners): Physical Rehabilitation Exercises Assessment based on Hidden Semi-Markov Model by Kinectv2

IEEE International Conference on Biomedical and Health Informatics (BHI), Las Vegas, February 24-27 2016

INVOLVEMENT IN INTERNATIONAL RESEARCH PROJECTS

Projects:

KSERA EU Project (project ID: 248085), IPA Adriatic CBC Programme AdriHealthMob, Health@Home (grant nos. SCN 0558), HICMO, MIRAGE

EXTERNAL COMMISSIONER

Admission to the Doctoral Program in Neuroscience

Cycle XXXIV Doctoral School in Neuroscience, Università degli studi di Torino

Computational statistic and machine learning to extract patterns in human movements

INDEPENDENT REVIEWER MARIE CURIE ACTION

MINDED Application

<https://minded-cofund.eu>

TEACHING-SUPPORT ACTIVITY

- Sistemi di Elaborazione dell'Informazione (Operating systems) – ING INF/05, Professor Primo Zingaretti, Università Politecnica delle Marche
- Programmazione ad oggetti (Object oriented programming) – ING INF/05, Professor Emanuele Frontoni, Università Politecnica delle Marche
- Programmazione ad oggetti (Object oriented programming) – ING INF/05, Professor Adriano Mancini, Università Politecnica delle Marche
- Assistive robotics, Professor Sauro Longhi, Università Politecnica delle Marche
- Technologies for automation and robotics, Professor Gianluca Ippoliti, Università Politecnica delle Marche

COURSES FOR INDUSTRIES

- Agile methodologies
- Scrum methodology

MASTER-THESIS SUPERVISION

Co-Advisor of Master Thesis in Biomedical Engineering, Università Politecnica delle Marche

1. Giacomo Turri, Affective State Recognition through Machine Learning Algorithms and a Non-Invasive Wearable Device

Co-Advisor of Master Thesis in Computer Engineering, Università Politecnica delle Marche

1. Fabio Tirabassi, Predictive maintenance through the use of AI methods for the production and testing of plastics in industry

STUDENT PROJECT SUPERVISION

Courses - Università Politecnica delle Marche

- Computer Vision
- Assistive Robotic
- Sistemi di Elaborazione dell'Informazione (Operating systems)
- Programmazione ad oggetti (Object oriented programming)

SCIENTIFIC SERVICE

Topic editor position

Algorithm (MDPI)

https://www.mdpi.com/journal/algorithms/topic_editors

Guest Editor in Special Issue

AI (Recognition of Human Emotions Using Machine learning and Deep learning algorithms)

https://www.mdpi.com/journal/ai/special_issues/RHEMLDLA

Guest Editor in Special Issue

Informatics (Machine Learning in Industry 4.0: From Predictive Maintenance to Design Support Systems)

https://www.mdpi.com/journal/informatics/special_issues/Machine_Learning_Industry4

Associate editor

IROS 2019

Technical Program Committee

International Conference on Consumer Electronics 2018, 2019, International Conference on Artificial Intelligence, Information Processing and Cloud Computing (AIIPCC 2019)

Co-chair

10th Forum Italiano Ambient Assisted Living 19-21 Giugno 2019 Ancona

International Conference reviewer

AAI2018, IJCNN2018, ESANN2018, ACII2019, ICCE, MESA, MED

International-journal reviewer

IEEE Journal of Biomedical and Health Informatics (IEEE), IEEE Transactions on Affective Computing (IEEE), IEEE Transactions on Neural Systems and Rehabilitation Engineering, IEEE Transactions on Emerging Topics in Computing, Medical and Biological Engineering and Computing (MBEC), Journal of Intelligent & Robotic Systems, Journal of Medical Internet Research (JMIR), Sensors (MDPI), Applied Sciences (MDPI), Remote Sensing (MDPI), Symmetry (MDPI), Algorithm (MDPI), Remote Sensing (MDPI), IET Computer Vision

INVITED WORKSHOP

Workshop Atlas Machine Learning Applied to Medical Data

Bâtiment IMAG - Université Grenoble Alpes , 22nd November 2019

'PredPsych', a R based toolbox for machine learning in experimental psychology

Atesh Koul, Luca Romeo, Andrea Cavallo, University of Turin, Torino, Italy, 24th May, 2018

'PredPsych', a R based toolbox for machine learning in experimental psychology

Atesh Koul, Luca Romeo, Andrea Cavallo, InfoMus Research Centre, Genoa, Italy, 9th July, 2019

PUBLICATIONS

Journal publications:

Bernardini, M., Morettini, M., **Romeo L.**, Frontoni, E., Burattini, L., Early temporal prediction of Type 2 Diabetes Risk Condition from a General Practitioner Electronic Health Record: A Multiple Instance Boosting Approach, Artificial Intelligence in Medicine, 2020 (accepted).

Romeo L., Cavallo, A., Pepa, L., Bianchi-Berthouze, N., and Pontil, M, "Multiple Instance Learning for Emotion Recognition using Physiological Signals," in IEEE Transactions on Affective Computing. doi: 10.1109/TAFFC.2019.2954118.

Romeo L., Loncarski J., Paolanti, M., Bocchini, G., Mancini, A., Frontoni, E., Machine learning-based design support system for the prediction of heterogeneous machine parameters in industry 4.0, Expert Systems with Applications, Volume 140, 2020, 112869, ISSN 0957-4174, <https://doi.org/10.1016/j.eswa.2019.112869>.

Bernardini, M., Morettini, M., **Romeo L.**, Frontoni, E., Burattini, L., TyG-er: An ensemble Regression Forest approach for identification of clinical factors related to insulin resistance condition using Electronic Health Records, Computers in Biology and Medicine, Volume 112, 2019, 103358, ISSN 0010-4825, <https://doi.org/10.1016/j.combiomed.2019.103358>.

Capecchi M, Ceravolo, M. G., Ferracuti, Iarlori, S., Monteriù, A., **Romeo L.**, and Verdini F."The KIMORE dataset: Kinematic assessment of MOVement and clinical scores for remote monitoring of physical REhabilitation," IEEE Transactions on Neural Systems and Rehabilitation Engineering. doi: 10.1109/TNSRE.2019.2923060.

Liciotti, D., Bernardini, M., **Romeo, L.**, Frontoni, E. A Sequential Deep Learning Application for Recognising Human Activities in Smart Homes. Neurocomputing 2019, <https://doi.org/10.1016/j.neucom.2018.10.104>.

Bernardini, M., **Romeo, L.**, Misericordia, P., and Frontoni, E. Discovering the Type 2 Diabetes in Electronic Health Records using the Sparse Balanced Support Vector Machine. IEEE Journal of Biomedical and Health Informatics 2019. doi: 10.1109/JBHI.2019.2899218

Paolanti, M., **Romeo, L.**, Martini, M., Mancini, A., Frontoni, E., and Zingaretti, P., Robotic retail surveying by deep learning visual and textual data, *Robotics and Autonomous Systems*, 2019, <https://doi.org/10.1016/j.robot.2019.01.021>.

Cavallo, A., **Romeo, L.**, Ansuini, C., Podda, J., Battaglia, F., Veneselli, E., Pontil, M., Becchio, C., Prospective motor control obeys to idiosyncratic strategies in autism. *Scientific Reports* volume 8, Article number: 13717 (2018).

Sale, P., Ferriero, G., Ciabattoni, L., Cortese, A.M., Ferracuti, F., **Romeo, L.**, Piccione, F., Masiero, S., Predicting Motor and Cognitive Improvement Through Machine Learning Algorithm in Human Subject that Underwent a Rehabilitation Treatment in the Early Stage of Stroke, *Journal of Stroke and Cerebrovascular Diseases*, Volume 27, Issue 11, 2018, Pages 2962-2972.

Paolanti, M., **Romeo, L.**, Liciotti, D., Pietrini, R., Cenci, A., Frontoni E, Zingaretti, P., Person Re-Identification with RGB-D Camera in Top-View Configuration through Multiple Nearest Neighbor Classifiers and Neighborhood Component Features Selection. *Sensors* 2018, 18(10).

Monteriù, A., Prist, M.R., Frontoni, E., Longhi, S., Pietroni, F., Casaccia, S., Scalise, L., Cenci, A., **Romeo, L.**, Berta, R., Pescosolido, L., Orlandi, G., Revel, G.M. A Smart Sensing Architecture for Domestic Monitoring: Methodological Approach and Experimental Validation. *Sensors* 2018, 18, 2310.

Capecci, M., Ciabattoni, L., Ferracuti, F., Monteriù, A., **Romeo L.**, and Verdini F., (in press), "Collaborative design of a telerehabilitation system enabling virtual second opinion based on fuzzy logic", *IET Computer Vision*. Volume: 12, Issue: 4, 6 2018.

Capecci, M., Ceravolo, M. G., Ferracuti, F., Grugnetti, M., Iarlori, S., Longhi, S., **Romeo L.**, and Verdini F., "An instrumental approach for monitoring physical exercises in a visual markerless scenario: a proof of concept", *Journal of Biomechanics*. Volume 69, 1 March 2018, Pages 70-80.

Capecci, M., Ceravolo, M. G., Ferracuti, F., Iarlori, S., Kyrki, V., Monteriù, A., **Romeo., L.** and Verdini, F., "A Hidden Semi-Markov Model based Approach for Rehabilitation Exercise Assessment", *Journal of Biomedical Informatics*. Volume 78, 2018, Pages 1-11.

Torta, E., van Heumen, J., Piunti, F., **Romeo, L.**, Cuijpers, R. "Evaluation of Unimodal and Multimodal Communication Cues for Attracting Attention in Human–Robot Interaction", (2015) *International Journal of Social Robotics*, 7 (1), pp. 89-96.

Conference proceedings:

Romeo, L., Armentano G., Nicolucci A., Vespasiani M., Vespasiani G., Frontoni E. (2020) A Novel Spatio-Temporal Multi-Task Approach for the Prediction of Diabetes-Related Complication: a Cardiopathy Case of Study. *International Joint Conferences on Artificial Intelligence* 2020 (accepted).

Romeo, L., Paolanti, M., Bocchini, G., Jelena, L. and Frontoni, E. (2018). An Innovative Design Support System for Industry 4.0 Based on Machine Learning Approaches. 1-6. 10.1109/EFEA.2018.8617089.

Calamanti, C., Paolanti, M., **Romeo, L.**, Bernardini, M., Frontoni, E., Machine learning-based approaches to analyse and improve the diagnosis of endothelial dysfunction 2018 14th IEEE/ASME International Conference on Mechatronic and Embedded Systems and Applications (MESA).

Paolanti, M., **Romeo, L.**, Felicetti, A., Mancini, A., Frontoni, E., Loncarski, L., Machine Learning approach for Predictive Maintenance in Industry 4.0, 2018 14th IEEE/ASME International Conference on Mechatronic and Embedded Systems and Applications (MESA).

Belgiovine, G., Capecci, M., Ciabattoni, L., Fiorentino, MC., Monteriù, A., Pepa, L., **Romeo, L.**, Upper Limbs Dyskinesia Detection and Classification for Patients with Parkinson's Disease based on Consumer Electronics Devices, 2018 Zooming Innovation in Consumer Technologies Conference (ZINC), 156-157.

Ciabattoni, L., Foresi, G., Monteriù, A., Pagnotta, D. P., **Romeo, L.**, Spalazzi, L., De Cesare, A., "Complex activity recognition system based on cascade classifiers and wearable device data", IEEE International Conference on Consumer Electronics (ICCE) 2018.

Ciabattoni, L., Frontoni, E., Liciotti, D., Paolanti, M., **Romeo, L.**, "A Sensor Fusion Approach for Measuring Emotional Customer Experience in an Intelligent Retail Environment", IEEE 7th International Conference on Consumer Electronics-Berlin (ICCE-Berlin 2017).

Ciabattoni, L., Ferracuti, F., Longhi, S., Pepa, L., **Romeo, L.**, Verdini, F., "Multimedia Experience Enhancement through Affective Computing", IEEE International Conference on Consumer Electronics, Las Vegas, Jan 8-11 2017.

Ciabattoni, L., Ferracuti, F., Longhi, S., Pepa, L., **Romeo, L.**, Verdini, F., "Real-time Mental Stress Detection Based On Smartwatch", IEEE International Conference on Consumer Electronics, Las Vegas, Jan 8-11 2017.

Ciabattoni, L., Ferracuti, F., Lazzaro, G., **Romeo, L.**, "Serious gaming approach for physical activity monitoring: a visual feedback based on quantitative evaluation", (2016) IEEE International Conference on Consumer Electronics (ICCE), Berlin, September 5-7 2016

Capecchi, M., Ceravolo, M. G., Ferracuti, F., Iarlori, S., Longhi, S., **Romeo, L.**, Russi, S. N., Verdini, F., "Accuracy of the Kinect v2 sensor for measuring clinical features for rehabilitation exercises monitoring", EMBC 38th Annual International Conference IEEE Engineering in Medicine and Biology Society Orlando, Florida, USA, August 16-20 2016.

Capecchi, M., Ceravolo, M.G., Ferracuti, F., Iarlori, S., Kyrki, V., Longhi, S., **Romeo, L.**, Verdini, F., "Physical Rehabilitation Exercises Assessment based on Hidden Semi-Markov Model by Kinectv2", IEEE International Conference on Biomedical and Health Informatics (BHI), Las Vegas, February 24-27 2016.

Ciabattoni, L. , Ferracuti, F., Iarlori, S., Longhi, S., **Romeo, L.**, "A novel computer vision based e-rehabilitation system: From gaming to therapy support," (2016) IEEE International Conference on Consumer Electronics (ICCE), Las Vegas, NV, 2016, pp. 43-44.

Capecchi, M., Ceravolo, M.G., D'orazio, F., Ferracuti, F., Iarlori, Lazzaro, G., Longhi, S., **Romeo, L.**, Verdini, F., "A tool for home-based rehabilitation system for clinical evaluation in visual marker less scenario", (2015) EMBC 37th Annual International Conference IEEE Engineering in Medicine and Biology Society Mico- Milano Conference Center- Milan, Italy, August 25-29 2015.

Grisostomi, M., Ciabattoni, L., Prist, M., **Romeo, L.**, Ippoliti, G., Longhi, S. "Modular design of a novel wireless sensor node for smart environments", (2014) MESA 2014 - 10th IEEE/ASME International Conference on Mechatronic and Embedded Systems and Applications.

BIO

Luca Romeo received a Ph.D. degree in computer science from the Department of Information Engineering (DII), Università Politecnica delle Marche, in 2018. His Ph.D. thesis was on "applied machine learning for human motion analysis and affective computing". He is currently a PostDoc Researcher with DII and he is affiliated with the Unit of Cognition, Motion and Neuroscience and Computational Statistics and Machine Learning, Fondazione Istituto Italiano di Tecnologia Genova. His research topics include Machine learning applied to biomedical applications, affective computing and motion analysis.

TRAINING

July 2015

SIDRA 2015 PhD Summer School: Robotics and Underwater Robotics

Bertinoro University Residential Center, Bertinoro, Italy

August 2015

IEEE-EMBS International Summer School on Biomedical Signal Processing

University of Pavia, Italy

PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	B2	B2	B2	B2

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2: Proficient user
Common European Framework of Reference (CEF) level

Communication skills

- team work: I have worked in various types of teams from research teams to football team.
- mediating skills: I have supervised seminar and different research meeting and I have reviewed different Conference and Journal Paper in the computer science field.
- intercultural skills: I am experienced at working in an international scenario.

Programming skills

- Libraries and Frameworks: Statistics and Machine Learning Toolbox and Signal Processing Toolbox Matlab, scikit-learn, ROS.
- Programming Languages: Matlab, C, C++, Python, R.
- Operating Systems: Ubuntu, Mac OS X, Windows.

Driving licence A, B

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25th May 2021