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CONFERENCE PROGRAM

Wednesday, October 26

Session 1.1 - Artificial intelligence, machine learning and computer vision in healthcare

Room: Conference Hall

Chairs: Esteban José Palomo, *University of Málaga, Spain*
Andrea Apicella, *University of Naples Federico II, Italy*

1 **Deep Learning Model for Blood Pressure Estimation From PPG Signal**
Minseong Kim, Electronics and Telecommunications Research Institute, Korea
Hyeonjeong Lee, Electronics and Telecommunications Research Institute, Korea
Kwang-Yong Kim, Electronics and Telecommunications Research Institute, Korea
Kyu Hyung Kim, Electronics and Telecommunications Research Institute, Korea

6 **CASPAR: Cloud-Based Alzheimer's, Schizophrenia and Parkinson's Automatic Recognizer**
Selene Tomassini, Università Politecnica delle Marche, Italy
Paolo Sernani, Università Politecnica delle Marche, Italy
Nicola Falcionelli, Università Politecnica delle Marche, Italy
Aldo F. Dragoni, Università Politecnica delle Marche, Italy

11 **Sign Detect: An App to Detect Sign Language**
Dhruvisha Vikas Mondhe, University of Mumbai, India
Rutuja Patil, University of Mumbai, India
Vaishnavi Jadhav, University of Mumbai, India
Priyal Agarwal, University of Mumbai, India
Lifna Challissery Samu, University of Mumbai, India

16 **Pneumonia Detection in Chest X-Ray Images Using Convolutional Neural Networks**
Esteban J. Palomo, University of Malaga, Spain
Miguel Zafra-Santisteban, University of Malaga, Spain
Rafael M. Luque-Baena, University of Malaga, Spain

22 **Stenosis Detection in Coronary Angiography Images Using Deep Learning Models**
Rafael M. Luque-Baena, University of Malaga, Spain
Irene Romero-Granados, University of Malaga, Spain
Ariadna Jiménez-Partinen, University of Malaga, Spain
Esteban J. Palomo, University of Malaga, Spain
Manuel Jiménez-Navarro, Hospital Universitario Virgen de la Victoria, Spain

Session 1.2 - Instrumentation and Measurement for Battery-powered XR headsets and neural interfaces

Room: Marconi Hall

Chairs: Loredana Cristaldi, *Politecnico di Milano, Italy*
Emil Petkovski, *Politecnico di Milano, Italy*

28 **Automated Test Equipment for Battery Characterization: A Proposal**
Silvia Colnago, Politecnico di Milano, Italy
Marco Faifer, Politecnico di Milano, Italy
Emil Petkovski, Politecnico di Milano, Italy
Luigi Piegari, Politecnico di Milano, Italy

34 **An Application of Failure Modes, Effects and Criticality Analysis (FMECA) Method to the Assessment of Battery Life Cycle**
Loredana Cristaldi, Politecnico di Milano, Italy
Elena Molena, Politecnico di Milano, Italy
Emil Petkovski, Politecnico di Milano, Italy

Session 1.4 - User Performance Assessment/Measurement in XR

Room: Video-Conference Hall
Chairs: Joseph Gabbard, *Virginia Tech, US*
Antonio Uva, *Politecnico di Bari, Italy*

POSTER SESSION 1

Room: National Research Council Headquarters
Chairs: Oscar Tamburis, *National Research Council of Italy*
Egidio De Benedetto, *University of Naples Federico II, Italy*

Session 2.1 - eXtended Reality as a gateway to the Metaverse: Practices, Theories, Technologies and Applications

Room: Conference Hall

Chairs: Giuseppe Caggianese, *National Research Council of Italy*
Ugo Erra, *University of Basilicata, Italy*

Session 2.2 - Motor Imagery - based Brain-Computer Interfaces: improving user performance to go beyond the laboratory

Room: Marconi Hall

Chairs: Fabien Lotte, *Inria Bordeaux Sud-Ouest, France*
Léa Pillette, *Univ. Bordeaux, France*

Session 2.4 - Ultra-low-power data sensing and processing based on artificial intelligence technologies

Room: Video-Conference Hall
Chairs: Giorgio Ferrari, *Politecnico di Milano, Italy*
Michele Mastella*, University of Groningen, The Netherlands*

Session 3.1 - Human bodily perception. Enhanced dimensions for eXtended Reality and neural engineering

Room: Conference Hall
Chairs: Silvia Serino, *Università Cattolica di Milano, Italy*
Daniele Di Lernia*, Università Cattolica di Milano, Italy*

Session 3.2 - Artificial Intelligence, Metrology and eXtended Reality for Criminal Investigation and Forensic Science

Room: Marconi Hall

Chairs: Aldo F. Dragoni, *Università Politecnica delle Marche, Italy*
Paolo Castellini, *Università Politecnica delle Marche, Italy*

Session 3.4 - Anomaly detection on Cyber Physical Systems

Room: Video-Conference Hall

Chairs: Vincenzo Moscato, *University of Naples Federico II, Italy*
Giancarlo Sperlì, *University of Naples Federico II, Italy*

Thursday, October 27

Session 4.1 - Machine learning analysis and simulation approaches for biomedical engineering - PART 1

Room: Conference Hall
Chairs: Leandro Donisi, *University of Naples Federico II, Italy*
Carlo Ricciardi, *University of Naples Federico II, Italy*

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Giuseppe Cesarelli, University of Naples Federico II, Italy
Salvatore De Rosa, Università degli Studi Magna Græcia di Catanzaro, Italy
Leandro Donisi, University of Naples Federico II, Italy
Claudia Critelli, Università degli Studi Magna Græcia di Catanzaro, Italy
Alessio Merola, Università degli Studi Magna Græcia di Catanzaro, Italy
Ciro Indolfi, Università degli Studi Magna Græcia di Catanzaro, Italy
Carlo Cosentino, Università degli Studi Magna Græcia di Catanzaro, Italy
Francesco Amato, University of Naples Federico II, Italy

289 **The Role of Muscle and Tendon in Predicting Cartilage Degeneration and Tendinopathy**
Zakia Khatun, University of Salerno, Italy
Mariella Tsirilaki, University Hospital of Iceland, Iceland
Alessia Lindemann, University of Bologna, Italy
Francesco Tortorella, University of Salerno, Italy
Nicola Maffulli, University of Salerno, Italy
Halldór Jónsson Jr, University Hospital of Iceland, Iceland
Paolo Gargiulo, Reykjavik University, Iceland

295 **Breast Density Analysis on Mammograms: Application of Machine Learning With Textural Features**
Francesca Angelone, University of Naples Federico II, Italy
Alfonso Maria Ponsiglione, University of Naples Federico II, Italy
Carlo Ricciardi, University of Naples Federico II, Italy
Maria Paola Belfiore, University of Campania Luigi Vanvitelli, Italy
Gianluca Gatta, University of Campania Luigi Vanvitelli, Italy
Francesco Amato, University of Naples Federico II, Italy
Mario Sansone, University of Naples Federico II, Italy
Roberto Grassi, University of Campania Luigi Vanvitelli, Italy

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Session 4.3 - SPECIAL EVENT - Psychobit - PART 1

Room: Laguna Hall
Chair: Michela Ponticorvo, *University of Naples Federico II, Italy*

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Gianluca Mariano Colella, University of Calabria, Italy
Anna Lisa Palermiti, University of Calabria, Italy
Maria Giuseppina Bartolo, University of Calabria, Italy
Rocco Servidio, University of Calabria, Italy
Angelo Mendicelli, University of Calabria, Italy
Domenico Ielasi, University of Calabria, Italy
Angela Costabile, University of Calabria, Italy

306 **Mental Health Mobile Apps to Empower Psychotherapy: A Narrative Review**
Federico Diano, University of Naples Federico II, Italy
Michela Ponticorvo, University of Naples Federico II, Italy
Luigia Sica, University of Naples Federico II, Italy

312 **Computerized Training of Executive Functions in a Child With Specific Learning Disorders: A Descriptive Study**
Raffaele Nappo, METaLab, Centro di Riabilitazione Neapolisanit, Italy
Mariangela Cerasuolo, AIAS, Italy
Francesco Ciaramella, METaLab, Centro di Riabilitazione Neapolisanit, Italy
Roberta Simeoli, University of Naples Federico II, Italy
Jessica Napolitano, Università degli Studi della Campania Luigi Vanvitelli, Italy
Maddalena Giugliano, Centro di Riabilitazione Neapolisanit, Italy
Angelo Rega, University of Naples Federico II, Italy

318 **The Design of a Game-Based Software for Children With Autism Spectrum Disorder**
Maria Luongo, University of Naples Federico II, Italy
Roberta Simeoli, University of Naples Federico II, Italy
Davide Marocco, University of Naples Federico II, Italy
Michela Ponticorvo, University of Naples Federico II, Italy

Session 5.1 - Machine learning analysis and simulation approaches for biomedical engineering - PART 2

Room: Conference Hall
Chairs: Giuseppe Cesarelli, *University of Naples Federico II, Italy*
Alfonso Maria Ponsiglione, *University of Naples Federico II, Italy*

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Francesca Angelone, University of Naples Federico II, Italy
Francesco Amato, University of Naples Federico II, Italy
Roberto Grassi, University of Campania Luigi Vanvitelli, Italy

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Marco Recenti, Reykjavik University, Iceland
Deborah Jacob, Reykjavik University, Iceland
Romain Aubonnet, Reykjavik University, Iceland
Bérangère Burgunder, Reykjavik University, Iceland
Itziar Mengual i Escalona, Reykjavik University, Iceland
Arnar E. Gunnarsson, Reykjavik University, Iceland
Federica Kiyomi Ciliberti, Reykjavik University, Iceland
Riccardo Forni, Reykjavik University, Iceland
Leandro Donisi, University of Naples Federico II, Italy, Reykjavik University, Iceland
Hannes Petersen, University of Iceland, Akureyri Hospital, Iceland
Paolo Gargiulo, Reykjavik University, Iceland

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Carlo Ricciardi, University of Naples Federico II, Italy
Giuseppe Cesarelli, University of Naples Federico II, Italy
Alfonso Maria Ponsiglione, University of Naples Federico II, Italy
Gianmaria De Tommasi, University of Naples Federico II, Italy
Mario Cesarelli, University of Naples Federico II, Italy
Maria Romano, University of Naples Federico II, Italy
Giovanni Improta, University of Naples Federico II, Italy
Francesco Amato, University of Naples Federico II, Italy

340 **Performing a Short Sway to Distinguish Parkinsonisms**
Michela Russo, University of Naples Federico II, Italy
Carlo Ricciardi, University of Naples Federico II, Italy
Marianna Amboni, University of Salerno, Italy
Marina Picillo, University of Salerno, Italy
Gianluca Ricciardelli, Azienda Ospedaliera Universitaria OO. RR. San Giovanni di Dio e Ruggi, Italy
Filomena Abate, University of Salerno, Italy
Maria Francesca Tepedino, University of Salerno, Italy
Maria Consiglia Calabrese, Azienda Ospedaliera Universitaria OO. RR. San Giovanni di Dio e Ruggi, Italy
Mario Cesarelli, University of Naples Federico II, Italy
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Leandro Donisi, University of Naples Federico II, Italy
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Edda Capodaglio, IRCCS Maugeri, Italy
Monica Panigazzi, IRCCS Maugeri, Italy
Mario Cesarelli, University of Naples Federico II, Italy
Giovanni D'Addio, IRCCS Maugeri, Italy

Session 5.3 - SPECIAL EVENT - Psychobit - PART 2

Room: Laguna Hall
Chairs: Onofrio Gigliotta, *University of Naples Federico II, Italy*
Davide Marocco, *University of Naples Federico II, Italy*

352 **The Role of Empathic Traits in the Interaction With Virtual Humans**
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Tina Iachini, University of Campania Luigi Vanvitelli, Italy
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Michela Ponticorvo, University of Naples Federico II, Italy

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Nicola Milano, Institute of Cognitive Sciences and Technologies - CNR, Italy
Stefano Nolfi, Institute of Cognitive Sciences and Technologies - CNR, Italy

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Pasquale Dolce, University of Naples Federico II, Italy
Michela Ponticorvo, University of Naples Federico II, Italy
Davide Marocco, University of Naples Federico II, Italy

POSTER SESSION 2

Room: National Research Council Headquarters
Chairs: Oscar Tamburis, *National Research Council of Italy*
Egidio De Benedetto, *University of Naples Federico II, Italy*

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Kazuki Yamawaki, National Institute of Information and Communications Technology, Japan
Hiroki Watanabe, National Institute of Information and Communications Technology, Japan
Yasushi Naruse, National Institute of Information and Communications Technology, Japan

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Room: Conference Hall
Chairs: Salvatore Livatino, *University of Hertfordshire, United Kingdom*
Saber Sami, *University of East Anglia, United Kingdom*

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Davide Allevi, University of Bologna, Italy
Gianluca Lutero, University of Bologna, Italy
Laura Calza, University of Bologna, Italy
Danilo Montesi, University of Bologna, Italy

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Kathapet Nawongs, University of East Anglia, United Kingdom
Jack Dainty, University of East Anglia, United Kingdom
Alexander Macgregor, University of East Anglia, United Kingdom

449 **The Immersion Advantage in Command & Control: From Desktop Monitors to VR Headsets**
Alessandro Zocco, Elettronics Group (ELT), Italy
Salvatore Livatino, University of Hertfordshire, United Kingdom
Phillip Gainley, University of Hertfordshire, United Kingdom
Yasir Iqbal, University of Hertfordshire, United Kingdom
Giuseppe Morana, University of Hertfordshire, United Kingdom

454 **Immersive Visualization in Pilot Training: From Cockpit Panels to Drone Navigation**
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Giuseppe Morana, University of Hertfordshire, United Kingdom
Yasir Iqbal, University of Hertfordshire, United Kingdom
Maya Mohamed, University of Hertfordshire, United Kingdom
Sungwoo David Hwang, University of Hertfordshire, United Kingdom
Phillip Gainley, University of Hertfordshire, United Kingdom
Hai Thanh Nguyen, HoChiMinh City University of Technical Education, Vietnam
Kate Williams, University of Hertfordshire, United Kingdom
Alessandro Zocco, Elettronics Group (ELT), Italy

Session 6.2 - Biosignal-based Measurements of Mental States

Room: Marconi Hall
Chairs: Antonino Raffone, *Sapienza University of Rome, Italy*
Giovanni D'Errico, *Politecnico di Torino, Italy*

459 **Nat(UR)e: Quantifying the Relaxation Potential of Ultra-Reality Multisensory Nature Walk Experiences**
Marilia Karla Soares Lopes, INRS-EMT, University of Québec, Canada
Belmir J. de Jesus, Jr., INRS-EMT, University of Québec, Canada
Marc-Antoine Moinnereau, INRS-EMT, University of Québec, Canada
Reza Amini Gougeh, INRS-EMT, University of Québec, Canada
Olivier Rosanne, INRS-EMT, University of Québec, Canada
Walter Schubert, INRS-EMT, University of Québec, Canada, Federal University of Health Sciences of Porto Alegre, Brazil
Alcyr Alves de Oliveira, INRS-EMT, University of Québec, Canada, Federal University of Health Sciences of Porto Alegre, Brazil
Tiago Falk, INRS-EMT, University of Québec, Canada

Session 6.4 - Metrological methods and results on eXtended Reality, Artificial Intelligence and Neural Engineering in Healthcare

Room: Video-Conference Hall

Chairs: Vincenzo Ferrari, *University of Pisa, Italy*
Elvis C. S. Chen, *Western University, Robarts Research Institute, Canada*

501 **The Right Mix of Visual and Mechanical Constraints to Guide the Relative Pose Between Rigid Objects**
Vincenzo Ferrari, University of Pisa, Italy
Marina Carbone, University of Pisa, Italy
Giulia Sciarrino, University of Pisa, Italy
Fabrizio Cutolo, University of Pisa, Italy

506 **How to Mitigate Perceptual Limits of OST Display for Guiding Manual Tasks: A Proof of Concept Study With Microsoft HoloLens**
Sara Condino, University of Pisa, Italy
Fabrizio Cutolo, University of Pisa, Italy
Giulia Zari, University of Pisa, Italy
Renzo D'Amato, University of Pisa, Italy
Marina Carbone, University of Pisa, Italy
Vincenzo Ferrari, University of Pisa, Italy

Friday, October 28

Session 7.1 - AI-enabled solutions for e-health and value-cocreation

Room: Conference Hall
Chairs: Cristina Mele, *University of Naples Federico II, Italy*
Tiziana Russo Spena, *University of Naples Federico II, Italy*

511 **The Adoption of Artificial Intelligence Technologies in the Era of "Grey Tsunami": Prospects and Challenges**
Valentina Della Corte, University of Naples Federico II, Italy
Giovanna Del Gaudio, University of Naples Federico II, Italy
Fabiana Sepe, University of Naples Federico II, Italy
Simone Luongo, University of Naples Federico II, Italy
Anna Crisci, University of Naples Federico II, Italy

517 **Minimal Robot to Foster Well-Being: The HIRO Project**
Irene Di Bernardo, University of Naples Federico II, Italy
Marialuisa Marzullo, University of Naples Federico II, Italy
Cristina Mele, University of Naples Federico II, Italy
Tiziana Russo Spena, University of Naples Federico II, Italy
Stefano Paolo Russo, University of Naples Federico II, Italy

522 **Blockchain Technology and Artificial Intelligence for Value Co-Creation in Healthcare**
Ylenia Cavacece, University of Naples Federico II, Italy
Sara Ebraico, University of Naples Federico II, Italy
Tiziana Russo Spena, University of Naples Federico II, Italy
Cristina Mele, University of Naples Federico II, Italy
Daniele Leone, University of Naples Parthenope, Italy
Francesco Schiavone, University of Naples Parthenope, Italy
Anna Bastone, University of Naples Parthenope, Italy

528 **Complementary Role of Conversational Agents in e-Health Services**
Angelo Ranieri, University of Naples Federico II, Italy
Andrea Ruggiero, University of Naples Federico II, Italy

534 **Healthy Food Delivery: Evidences From Italy**
Fabio Greco, University of Naples Parthenope, Italy
Francesco Carignani, University of Naples Parthenope, Italy
Marco Tregua, University of Naples Parthenope, Italy
Francesco Bifulco, University of Naples Parthenope, Italy

Session 7.2 - Legal aspects on Science & Society in Brain Computer Interface

Room: Marconi Hall

Chairs: Maria Cristina Gaeta, *Università degli Studi Suor Orsola Benincasa di Napoli, Italy*
Roberta Presta, *Università degli Studi Suor Orsola Benincasa di Napoli, Italy*

Session 8.1 - Sensors, Extended Reality and Artificial Intelligence for Human Behavior Analysis

Room: Conference Hall

Chairs: Andrea Zingoni, *University of Tuscia, Italy*
Juri Taborri, *University of Tuscia, Italy*

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José M Alcalde-Llergo, University of Córdoba, Spain
Pilar Aparicio-Martínez, University of Córdoba, Spain
Juri Taborri, University of Tuscia, Italy
Andrea Zingoni, University of Tuscia, Italy
Sara Pinzi, University of Córdoba, Spain

591 **Exploring the Dynamics of Emotions in the Space of Colours Through the Viable Systems Approach (vSa) Perspective**
Sergio Barile, Sapienza University of Rome, Italy
Clara Bassano, University of Salerno, Italy
Pietro Vito, Sapienza University of Rome, Italy
Aysel Alizada, Sapienza University of Rome, Italy
Roberto Cavaliere, University of Salerno, Italy
Paolo Barile, University of Salerno, Italy

Session 8.2 - Soft Sensors for Industry 4.0

Room: Marconi Hall
Chairs: Salvatore Graziani, *University of Catania, Italy*
Maria Gabriella Xibilia, *University of Messina, Italy*

597 **Estimating Finite-Time Delay in Dynamical Soft Sensors: An Industrial Case of Study**
Salvatore Graziani, University of Catania, Italy
Luca Patanè, University of Messina, Italy
Maria Gabriella Xibilia, University of Messina, Italy

602 **Application of Data Distribution Metrics for Soft Sensors in Industrial Scenarios**
Francesco Curreri, University of Palermo, Italy
Luca Patanè, University of Messina, Italy
Maria Gabriella Xibilia, University of Messina, Italy

608 **A Combined Approach Using Lorentzian Fitting and ANNs for Microwave Resonator Modeling**
Zlatica Marinković, University of Nis, Serbia
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Giuseppe Campobello, University of Messina, Italy
Giovanni Crupi, University of Messina, Italy
Nicola Donato, University of Messina, Italy

613 **Batch Endpoint Prediction Using Local Mixture of Batch Time Experts**
Francisco Souza, Radboud University, The Netherlands
Tim Offermans, Radboud University, The Netherlands
Jeroen Jansen, Radboud University, The Netherlands

618 **Artificial Neural Networks for the Forecasting of Wave Climate in Proximity of Harbour Area**
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Giovanni Santonocito, University of Catania, Italy
Antonino Andrea Moschetto, University of Catania, Italy
Claudio Iuppa, University of Messina, Italy
Rosaria Musumeci, University of Catania, Italy
Luca Cavallaro, University of Catania, Italy
Enrico Foti, University of Catania, Italy

POSTER SESSION 3

Room: National Research Council Headquarters
Chairs: Oscar Tamburis, *National Research Council of Italy*
Egidio De Benedetto, *University of Naples Federico II, Italy*

624 **Predictive Maintenance of Industrial Equipment Using Deep Learning: From Sensory Data to Remaining Useful Life Estimation**
David C. Nchekwube, Università Politecnica delle Marche, Italy
Francesco Ferracuti, Università Politecnica delle Marche, Italy
Alessandro Freddi, Università Politecnica delle Marche, Italy
Sabrina Iarlori, Università Politecnica delle Marche, Italy
Sauro Longhi, Università Politecnica delle Marche, Italy
Andrea Monteriù, Università Politecnica delle Marche, Italy

630 **Evaluation of the Effectiveness of a Wearable, AR-Based BCI for Robot Control in ADHD Treatment**
Pasquale Arpaia, University of Naples Federico II, Italy
Sabatina Criscuolo, University of Naples Federico II, Italy
Egidio De Benedetto, University of Naples Federico II, Italy
Nicola Donato, University of Messina, Italy
Luigi Duraccio, Politecnico di Torino, Italy

635 **A New Dataset of Satellite Images for Deep Learning-Based Coastline Measurement**
Marco Scarpetta, Polytechnic University of Bari, Italy
Maurizio Spadavecchia, Polytechnic University of Bari, Italy
Vito Ivano D'Alessandro, Polytechnic University of Bari, Italy
Luisa De Palma, Polytechnic University of Bari, Italy
Nicola Giaquinto, Polytechnic University of Bari, Italy

641 **Semi-Automated Image Segmentation of Peri-Prostatic Tissue on MRI and Radiomics Features Stability: A Feasibility Study for Locally Advanced Prostate Cancer Detection**
Arnaldo Stanzione, University of Naples Federico II, Italy
Renato Cuocolo, University of Salerno, Italy
Gianluigi Califano, University of Naples Federico II, Italy
Andrea Ponsiglione, University of Naples Federico II, Italy
Claudia Colla Ruvolo, University of Naples Federico II, Italy
Gaia Spadarella, University of Naples Federico II, Italy
Marco De Giorgi, University of Naples Federico II, Italy
Francesca Nessuno, University of Naples Federico II, Italy
Nicola Longo, University of Naples Federico II, Italy
Massimo Imbriaco, University of Naples Federico II, Italy

646 **To the Green From the Bl(u)e: An Innovative System for Monitoring Urban Green Areas**
Adriano Tramontano, National Reasearch Council of Italy, Italy
Oscar Tamburis, National Reasearch Council of Italy, Italy
Mario Magliulo, National Reasearch Council of Italy, Italy

651 **Artificial Neural Network for the Identification of Postural Instability in Subject Wearing Lower Limb Exoskeleton**
Ilaria Mileti, University Niccolò Cusano, Italy
Juri Taborri, University of Tuscia, Italy
Diego Torricelli, Spanish National Research Council, Spain
Stefano Rossi, University of Tuscia, Italy
Fabrizio Patanè, Niccolò Cusano University, Italy

Session 9.1 - Intrinsic Uncertainty in EEG-based Passive Brain Computer Interface (BCI)

Room: Conference Hall
Chairs: Antonio Esposito, *University of Naples Federico II, Italy*
Nicola Moccaldi, *University of Naples Federico II, Italy*

656 **EEG-Based System for Executive Function Fatigue Detection**
Andrea Apicella, University of Naples Federico II, Italy
Pasquale Arpaia, University of Naples Federico II, Italy
Paolo De Blasiis, University of Campania Vanvitelli, Italy
Anna Della Calce, University of Naples Federico II, Italy
Allegra Fullin, University of Campania Vanvitelli, Italy
Ludovica Gargiulo, University of Naples Federico II, Italy
Luigi Maffei, University of Campania Vanvitelli, Italy
Francesca Mancino, University of Naples Federico II, Italy
Nicola Moccaldi, University of Salento, Italy
Andrea Pollastro, University of Naples Federico II, Italy
Ersilia Vallefuoco, University of Naples Federico II, Italy

661 **Reproducible Assessment of Valence and Arousal Based on an EEG Wearable Device**
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Pasquale Arpaia, University of Naples Federico II, Italy
Andrea Cataldo, University of Salento, Italy
Giovanni D'Errico, Politecnico di Torino, Italy
Davide Marocco, University of Naples Federico II, Italy
Giovanna Mastrati, University of Naples Federico II, Italy
Nicola Moccaldi, University of Salento, Italy
Andrea Pollastro, University of Naples Federico II, Italy
Bernadette Ricciardi, University of Naples Federico II, Italy
Ersilia Vallefuoco, University of Naples Federico II, Italy

667 **Multi-Electrode Array (MEASs) to Investigate Pathogenetic Disease Mechanisms and Pharmacological Properties in iPSC-Derived Neurons Modelling Neuropsychiatric Diseases**
Giusy Carleo, University of Federico II, Naples, Italy
Yi-Shin Lee, University of Federico II, Naples, Italy
Agnese Secondo, University of Federico II, Naples, Italy
Francesco Miceli, University of Federico II, Naples, Italy
Maurizio Taglialatela, University of Federico II, Naples, Italy

673 **An Open Source Multi-Modal Data-Acquisition Platform for Experimental Investigation of Blended Control of Scale Vehicles**
Peter Redmond, Dublin City University, Ireland
Andrew Fleury, Dublin City University, Ireland
Tomas Ward, Dublin City University, Ireland

679 **Signal Quality Assessment of a Wearable Electroencephalography (EEG) Device Built on a Flexible Printed Circuit: FlexEEG**
Naomi du Bois, Ulster University, United Kingdom
Ryan Beveridge, Ulster University, United Kingdom
Niall McShane, Ulster University, United Kingdom
Tony Moore, Mortronics Ltd., Ireland
Damien Coyle, Ulster University, United Kingdom

Session 9.2 - Effective brain-computer interfaces based on active paradigms and extended reality

Room: Marconi Hall

Chairs: Emma Colamarino, *Sapienza University of Rome, Fondazione Santa Lucia IRCCS, Italy*
Niall McShane, *Ulster University, United Kingdom*

685 **Exploring Strategies for Multimodal BCIs in an Enriched Environment**
Tristan Venot, Sorbonne Université, France
Arthur Desbois, Sorbonne Université, France
Marie-Constance Corsi, Sorbonne Université, France
Laurent Hugueville, Sorbonne Université, France
Ludovic Saint-Bauzel, Sorbonne Université, France
Fabrizio De Vico Fallani, Sorbonne Université, France

691 **Multimodal Feedback in Assisting a Wearable Brain-Computer Interface Based on Motor Imagery**
Pasquale Arpaia, University of Naples Federico II, Italy
Damien Coyle, University of Ulster, United Kingdom
Francesco Donnarumma, National Research Council, Italy
Antonio Esposito, University of Naples Federico II, Italy
Angela Natalizio, Politecnico di Torino, Italy
Marco Parvis, Politecnico di Torino, Italy
Marisa Pesola, University of Naples Federico II, Italy
Ersilia Vallefuoco, University of Naples Federico II, Italy

697 **Online 3D Motion Decoder BCI for Embodied Virtual Reality Upper Limb Control: A Pilot Study**
Niall McShane, University of Ulster, United Kingdom
Karl McCreadie, University of Ulster, United Kingdom
Darryl Charles, University of Ulster, United Kingdom
Attila Korik, University of Ulster, United Kingdom
Damien Coyle, University of Ulster, United Kingdom

703 **Classifying Words in Natural Reading Tasks Based on EEG Activity to Improve Silent Speech BCI Training in a Transfer Approach**
Maurice Rekrut, German Research Center for Artificial Intelligence, Germany
Andreas Fey, Saarland University, Germany
Matthias Nadig, German Research Center for Artificial Intelligence, Germany
Johannes Ihl, German Research Center for Artificial Intelligence, Germany
Tobias Jungbluth, German Research Center for Artificial Intelligence, Germany
Antonio Krüger, German Research Center for Artificial Intelligence, Germany

709 **Low Frequency Brain Oscillations for Brain-Computer Interface Applications: From the Sources to the Scalp Domain**
Elena Mongiardini, University of Rome Sapienza, IRCCS Fondazione Santa Lucia, Italy
Emma Colamarino, University of Rome Sapienza, IRCCS Fondazione Santa Lucia, Italy
Jlenia Toppi, University of Rome Sapienza, IRCCS Fondazione Santa Lucia, Italy
Valeria de Seta, University of Rome Sapienza, IRCCS Fondazione Santa Lucia, Italy
Floriana Pichiorri, IRCCS Fondazione Santa Lucia, Italy
Donatella Mattia, IRCCS Fondazione Santa Lucia, Italy
Febo Cincotti, University of Rome Sapienza, IRCCS Fondazione Santa Lucia, Italy

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Session 9.4 - From Artificial Intelligence to Extended Reality for Emergency and Disaster Management

Room: Video-Conference Hall

Chairs: Silvia Liberata Ullo, *University of Sannio, Italy*
Fabio Leccese, *Roma Tre University, Italy*

714 **Early Detection of Volcanic Eruption Through Artificial Intelligence on Board**
Pietro Di Stasio, University of Sannio, Italy
Alessandro Sebastianelli, University of Sannio, Italy
Gabriele Meoni, European Space Agency, Italy
Silvia Liberata Ullo, University of Sannio, Italy

719 **A Demo Setup Testing Onboard CNNs for Volcanic Eruption Detection**
Maria Pia Del Rosso, University of Sannio, Italy
Alessandro Sebastianelli, University of Sannio, Italy
Dario Spiller, Sapienza University of Rome, Italy
Silvia Liberata Ullo, University of Sannio, Italy

725 **Wildfire Segmentation Analysis From Edge Computing for On-Board Real-Time Alerts Using Hyperspectral Imagery**
Dario Spiller, Sapienza University of Rome, Italy
Kathiravan Thangavel, RMIT University, Australia
Sarathchandrakumar Thottuchirayil Sasidharan, Sapienza University of Rome, Italy
Stefania Amici, National Institute of Geophysics and Volcanology, Italy
Luigi Ansalone, ASI - Italian Space Agency, Italy
Roberto Sabatini, Khalifa University of Science and Technology, United Arab Emirates