Summary: Simone Calderara (M age 43) is Associate Professor of Machine and Deep Learning at the Engineering Department Enzo Ferrari of University of Modena and Reggio Emilia (UNIMORE). He is representative for APRE-EU Cluster Digital, Industry and Space, UNIMORE representative in the CINI National Artificial Intelligent and Intelligent System AIIS laboratory, senior member of the Artificial Intelligence Research and Innovation center, senior member of AI Academy of UNIMORE, senior member of the AImageLab laboratory (aimagelab.unimore.it).
Simone is involved in several national and international project on deep learning and computer vision applied to people safety and industrial related problems (EU INSECTT, EU F4HPC, PRIN COSMOS, PRIN Lego-AI).
He is also ELLIS member and core member of the UNIMORE ELLIS Unit.
His main research interests are deep learning techniques for online, incremental and continual representation learning with application to human behavior understanding in industrial and urban scenarios. Simone has co-authored more than 100 publications with a Google Scholar h-index of 38.

RESEARCH ACTIVITIES: Simone 's main research activities are in the area of computer vision, and machine learning applied to human behavior analysis and industrial data. Specifically, his main interest span from deep learning and knowledge distillation methods for people tracking and re-identification to deep learning models for self-supervised and continual learning in industrial and earth observation domains.
His recent works focus on the exploitation of continual and memory-based model for rehearsing knowledge in lifelong system. Simone's strong expertise in the area of computer vision and deep learning is testified by publication on top tier journals (IEEE TPAMI, Elsevier CVIU, IEEE TCSVT and PR) and conferences (CVPR, ECCV/ICCV, NIPS, AISTATS). During his research career he cooperated with private and public national and international institutions (publishing joint works) such as: Hebrew University of Jerusalem Interdisciplinary Center for Neural Computation, Center for Research in Computer University of Central Florida, Intelligent Systems Lab Informatic Institute University of Amsterdam ,Duke University (USA), European Spatial Agency
Panasonic Beta Labs (USA) and QUALCOMM Incorporated.
He has published more than 90 papers on international journals or conferences (Google Scholar: 6500 citations, h-index 38). He also co-authored 3 book chapters.

GRANTS AND PROJECTS: Simone Calderara is/was the principal investigator or participated in several national and international projects.
Currently, he is the principal investigator or research unit coordinator of the following projects:
- EU project INTELLIGENT SECURE TRUSTABLE THINGS (INSECTT) Ecsel Joint Undertaking
- ESA founded Project Artificial Intelligence and Earth Observation data: innovative methods for monitoring West Nile Disease spread in Italy
- Project AI4Vect: Artificial Intelligence and Remote Sensing: innovative methods for monitoring VBDs' vectors and their environment founded by Italian Ministry of Health
- co-PI of UNIMORE ESR 2 "Object and People Recognition for personalized Interaction" Marie Curie MSCA-ITN PERSEO.
In the past he coordinated the UNIMORE research unit in the PRIN 2015 Project COSMOS (COntactlesS Multibiometric mObile System (in the wild)
) and the UNIMORE project UBIVNB (Ubiquitous objective measures of intergroup nonverbal behaviors). He participated as a senior researcher or OR technical chief in the EU projects THIS (Transport Hub Intelligent video System) and PRYSTINE and National Projects PRIN PREVUE and FreeSurf, POR FESR JUMP and IDHEA and tha Nato Science for Peace Project BeSafe.

INDUSTRIAL PROJECTS AND PATENTS: Simone Partecipated as technical chief or PI in more than 10 industrial research projects involving among others major national and international companies such as RFI, IMA, Tetrapak, Maserati, Yoox Net a Porter, Qualcomm, Panasonic, Ferrari… He is also co-authors of 3 patents, scientific advisor of the companies Axyon.AI and Ammagamma and founder of the start-up Go@AI.

AWARDS: Simone received several awards for its scientific achievements:

-2013 Best Paper Award @ IEEE International Conference on Advanced Video and Signal-based Surveillance AVSS Krakow(Poland) with a work titled "Structured learning for detection of social groups in crowd"
-2015 Best Paper Award @ IEEE International Conference on Advanced Video and Signal-based Surveillance AVSS, Karlsrhue (Germany) with a work titled "Towards the evaluation of reproducible robustness in tracking-by-detection"
-2016 co author and Machine Learning PI of the winning application at the Facebook AI Research (FAIR)Artificial Intelligence Program that selected the AImagelab as the only Italian partner. Simone Calderara authored the proposal regarding machine learning techniques for people tracking and behavior understanding.
-2016 New Scientist Magazine opening page and international and italian press(Daily Mail and La Repubblica) for the work on IAT assessment using computer vision and machine learning: "Andrea Palazzi, Simone Calderara, Nicola Bicocchi, Loris Vezzali, Gian Antonio di Bernardo, Franco Zambonelli, Rita Cucchiara, Proceedings of the 2016 ACM International Joint Conference on Pervasive and Ubiquitous Computing, 853-862."
-2017 Best Paper Finalist Award @ International Converence on Image Analysis and Processing Catania Italy with a work titled "Learning to Map Vehicles into Bird's Eye View"
-2020 ECCV Best DEMO award Inter-Homines AI and Computer vision for social distancing"
-2021 Outstanding reviewer Award Conference on Neural information processing Systems Neurips
-2021 CINECA ISCRA-C project GPU hours grant for project Auxiliary Data Exploration and Exploitation for Continual Learning ADELE-CL
-2022 CINECA ISCRA-B project GPU hours grant for Activity on Continual Learning and Latent Space geometry

STUDENT SUPERVISION: Simone is currently supervising or co-supervising 6 phd students. In the past he co-supervised 10 phd students and more than 30 Master students.

TEACHING: Simone is teaching the Machine and Deep Learning course at University of Modena for Computer Engineering MS, computer science MS, Advanced Electronics MS and Physycs MS. He is also lecturing the computer architecture course at Computer Engineering bachelor degree.

OTHER ACTIVITIES: Simone Calderara was Managing Guest Editor of the special issue "Pattern recognition and crowd analysis" on Pattern Recognition Letters. He is also currently Associate Editor of ACM Transactions on Multimedia Computing, Communications, and Applications (TOMM) 2year Impact Factor: 4.474 , SCImago Journal Rank (SJR): 0.922; Q1 in Computer Networks and Communication (Mutimedia) source SCImago. He is involved in PC of the major international conferences on computer vision and AI ICCV,ECCV,CVPR,NIPS,IJCAI,ICML,ICPR and AAAI. He was AC of AVSS conference (2017,2018) and ICIAP21 (2021). He serves regularly as reviewer for the major CV and AI journals TPAMI,CVIU PR, PRL, IEEE TCSVT, IJCV.
Simone participated in more than 20 invited talks at both national and international levels and was local organizer of the International Workshop on Computer Vision (IWCV) meeting, one of the most important meeting gathering principal international companies and expert in the field of CV (http://iwcv2018.unimore.it/).
Simone Calderara acted as project reviewer for the following institutions: Italian Ministry of Education and Research, EU commission (ERC consolidator evaluation) and National ARS projects evaluation.

INSTITUTIONAL ACTIVITIES:
Simone Calderara is the coordinator of the phd curriculum in "Industrial Application of ICT" of the ICT doctorate program @ UNIMORE. He is also member of the UNIMORE DIEF research commission and of the National workgroup for future EU workprograms on "Industry Digital and Space" topic.
Simone is coordinator of the UNIMORE unit in the CINI AIIS national lab on artificial intellingence and intelligent systems. He is also core and founder member of ELLIS@Unimore research unit and of the AIAcademy of UNIMORE.

MEMBERSHIP: Simone Calderara is a member of International Association for Pattern Recognition (IAPR), European Lab for Learning and Intelligent Systems (ELLIS), Institute of Electrical and Electronics Engineers (IEEE) and CINI Artificial Intelligence Laboratory.