Florenc **Demrozi**

PH.D. IN COMPUTER SCIENCE · POSTDOC & TEMPORARY PROFESSOR

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"Run towards the future without forgetting the past"
"Vrapo drejt se ardhmes duke mos harrua kurrë të kaluarë"

Summary

I am currently a postdoctoral researcher and temporary professor at the University of Verona, Italy, where I am member of the ESD (Electronic Systems Design) Research Group, working on Human Activity Recognition (HAR), Ambient Assisted Living (AAL), and Internet of Medical Things (IoMT). I obtained my Ph.D. in Computer Science in May 2020 supervised by Prof. Graziano Pravadelli, with a thesis on "An IoT based Virtual Coaching System for Assisting Activities of Daily Life". Previously, I received my Master's degree (M.Sc.) in Computer Science and Engineering at the University of Verona in 2016 with a thesis on Automatic generation of self-adaptive transactors from PSL assertions under the supervision of Prof. Graziano Pravadelli. I received my Bachelor's degree (B.Sc.) in Computer Science at the University of Verona in 2014. From April 2021, I am co-founder of the IoT for Care (IoT4Care) research group at the Department of Computer Science, University of Verona, Italy. The IoT4Care group focuses on developing Virtual Coaching System's, based on IoT infrastructure and Extended Mind concept, whose primary purpose is to help people with special needs in carrying out Activities of Daily Life (ADL's).

Education

University of Verona, Italy

Verona, Italy

PH.D. IN COMPUTER SCIENCE — *October 2016 - September 2019*

Key research areas: Human Activity Recognition (HAR), Ambient Intelligence (AmI), Ambient Assisted Living (AAL) and Internet of Medical Things (IoMT)
Title of the thesis: An IoT based Virtual Coaching System for Assisting Activities of Daily Life
Advisor: Prof. Graziano Pravadelli

University of Verona, Italy

Verona, Italy

M.S. IN COMPUTER SCIENCE AND ENGINEERING — *October 2013 - March 2016*

Degree: LM-32 - Master Degree in Computer Science and Engineering
Title of the thesis: Automatic generation of self-adaptive TLM protocols from PSL assertions
Supervisor: Prof. Graziano Pravadelli
Assistant Supervisor: Dr. Francesco Stefanni
Graduation date: 17/03/2016
Grade: 110/110 cum laude

University of Verona, Italy

Verona, Italy

B.S. IN COMPUTER SCIENCE — *October 2010 - March 2014*

Degree: Degree: L-31 - Bachelor Degree in Computer Science
Title of the thesis: Graphical User Interface for TestBench Specification Language (TSL) Generators
Supervisor: Prof. Graziano Pravadelli
Graduation date: 19/03/2014
Grade: 95/110

Current employment

Department of Computer Science, University of Verona, Italy

Verona, Italy

POSTDOCTORAL RESEARCH FELLOW — *October 2019 - Present*

Key research areas: Human Activity Recognition (HAR), Ambient Intelligence (AmI), Ambient Assisted Living (AAL), and Internet of Medical Things (IoMT)

Ph.D. School, University of Verona, Italy

Verona, Italy

TEACHING — *November 2022*

Course Name: A practical interdisciplinary PhD course on exploratory data analysis
Number of course credits: 3 of 5
Disciplinary sector: INF/01 - Informatics
Language of instruction: English

Department of Computer Science, University of Verona, Italy — *Verona, Italy*

Teaching — *September 2020 - April 2022*

Course Name: Operating Systems: Laboratory: Theory module
Number of course credits: 2 of 12
Disciplinary sector: ING-INF/05 - Information Processing Systems
Language of instruction: Italian

Department of Computer Science, University of Verona, Italy — *Verona, Italy*

Teaching — *September 2020 - April 2022*

Course Name: Operating Systems: Laboratory: Practice Module
Number of course credits: 2 of 12
Disciplinary sector: ING-INF/05 - Information Processing Systems
Language of instruction: Italian

Previous work experience

Department of Computer Science, University of Verona, Italy — *Verona, Italy*

Teaching (guest) (8 hours) — *March 2021 - June 2021*

Course Name: Advanced Operating Systems
Disciplinary sector: ING-INF/05 - Information Processing Systems
Language of instruction: Italian

Department of Computer Science, University of Verona, Italy — *Verona, Italy*

Teaching (guest) (8 hours) — *March 2020 - June 2020*

Course Name: Advanced Operating Systems
Disciplinary sector: ING-INF/05 - Information Processing Systems
Language of instruction: Italian

Department of Computer Science, University of Verona, Italy — *Verona, Italy*

Teaching Assistant (24 hours) — *March 2019 - June 2019*

Course Name: Advanced Operating Systems
Disciplinary sector: ING-INF/05 - Information Processing Systems
Language of instruction: Italian

Department of Computer Science, University of Verona, Italy — *Verona, Italy*

Teaching Assistant (300 hours) — *October 2016 - June 2019*

Course Name: Operating Systems
Disciplinary sector: ING-INF/05 - Information Processing Systems
Language of instruction: Italian

Department of Computer Science, University of Verona — *Verona, Italy*

Research Fellow — *April 2016 - September 2016*

Supervisor: Dr. Matteo Cristani
Activity: Design of an architecture based on IoT devices (e.g., Single Board Computer (SBC), Single Board Micro-controller (SBM)) aiming to facilitate the controllability and observability of industrial plants from a remote web-app application. Specifically, we defined an approach to implement the control strategy of industrial plants through Extended Finite State Machines (EFSMs).

Visiting Experiences

Department of Biomedical Engineering (BME) at University of Florida, United States — *1275 Center Dr, Gainesville, FL 32611, USA*

Visiting Scholar — *August 2019 - December 2019*

Supervisor: Prof. Parisa Rashidi. Associate professor at the J. Crayton Pruitt Family Department of Biomedical Engineering (BME) at University of Florida (UF). She is also affiliated with the Electrical & Computer Engineering (ECE), as well as Computer & Information Science & Engineering (CISE) departments. She is the director of the "Intelligent Health Lab" (i-Heal). Her research aims to bridge the gap between machine learning and patient care.
This visiting period concluded with the publication of a conference article [**C6**] and a journal article [**J2**].

TU Chemnitz, Faculty of Computer Science, Germany — *Straße der Nationen 62, 09111 Chemnitz, Germany*

Founded Visiting Post-Doc — *October 2021 - March 2022*

Host: Jun. Prof. Dr. Philipp Kindt. Assistant professor at the TU Chemnitz, Faculty of Computer Science, chair of Pervasive Computing Systems.
This visiting period was founded by the internationalization program of TUC with 12000 euros.

Summer Schools

Lipari School on Computational Complex and Social Systems - Cities of citizens: biosensors, social modeling and participatory computing — *Lipari Island, Italy*

Participant — *July 16, 2017 - July 22, 2017*

Summer School on Formal Methods for Cyber-Physical Systems: Automatic Synthesis of Controllers for Hybrid Systems — *Verona, Italy*

Participant — *September 12, 2017 - September 17*

Designing Cyber-Physical Systems From concepts to implementation — *Alghero, Italy*

Participant — *September 12, 2017 - September 17*

School on Emerging Technologies for Design and Engineering of Electronics Systems — *Verona, Italy*

Participant — *October 5, 2017 - October 7, 2017*

Summer School on Formal Methods for Cyber-Physical Systems — *Verona, Italy*

Participant — *June 3, 2019 - June 7, 2019*

A: Peer-reviewed scientific articles

Journal

2019 [J1]	**Demrozi F., Bacchin R, Tamburin S, Cristani M, Pravadelli G**, Towards a wearable system for predicting the freezing of gait in people affected by Parkinson's disease. IEEE journal of biomedical and health informatics. 2019 Nov 11.	*Online*
2020 [J2]	**Demrozi F., G. Pravadelli, A. Bihorac and P. Rashidi**, "Human Activity Recognition Using Inertial, Physiological and Environmental Sensors: A Comprehensive Survey," in IEEE Access, vol. 8, pp. 210816-210836, 2020, doi: 10.1109/ACCESS.2020.3037715.	*Online*
2021 [J3]	**Demrozi F., Chiarani, F., Turetta, C., Kindt, H. P. and Pravadelli, G.**, "Estimating indoor occupancy through low-cost BLE-based devices", IEEE Sensors Journal.	*Online*

Conference

2016 [C1]	**Demrozi F., Pravadelli G. and Stefanni F.**, Automatic generation of self-adaptive transactors from PSL assertions. In 2016 IEEE Forum on Specification and Design Languages (FDL) (pp. 1-7).	*Bremen, Germany*
2017 [C2]	**Demrozi F., Zucchelli R. and Pravadelli G.**, Exploiting sub-graph isomorphism and probabilistic neural networks for the detection of hardware Trojans at RTL. In 2017 IEEE International High Level Design Validation and Test Workshop (HLDVT) (pp. 67-73).	*Santa Cruz, CA, USA*
2018 [C3]	**Cristani M., Demrozi F. and Tomazzoli C.**, ONTO-PLC: An ontology-driven methodology for converting PLC industrial plants to IoT. Procedia Computer Science, 126, pp.527-536.	*Belgrade, Serbia*
2018 [C4]	**Demrozi F., Costa K., Tramarin F., Pravadelli G.**, A graph-based approach for mobile localization exploiting real and virtual landmarks. In2018 IFIP/IEEE International Conference on Very Large Scale Integration (VLSI-SoC) 2018 Oct 8 (pp. 249-254).	*Verona, Italy*
2019 [C5]	**Demrozi F., Bragoi V., Tramarin F., Pravadelli G.**, An indoor localization system to detect areas causing the freezing of gait in Parkinsonians. In 2019 ACM/IEEE Design, Automation & Test in Europe Conference & Exhibition (DATE) 2019 Mar 25 (pp. 952-955).	*Florence, Italy*
2019 [C6]	**Demrozi F., Pravadelli G., Tighe P.J., Bihorac A. and Rashidi P.**, 2020. Joint Distribution and Transitions of Pain and Activity in Critically Ill Patients, Accepted for publication at IEEE Engineering in Medicine and Biology Society (EMBC)	*Montréal, Canada*
2021 [C7]	**Demrozi F., Chiarani F., and Pravadelli G.**, A low-cost BLE-based distance estimation, occupancy detection and counting system. In 2021 ACM/IEEE Design, Automation & Test in Europe Conference & Exhibition (DATE).	*Grenoble, France*
2021 [C8]	**Demrozi F., Jereghi M., and Pravadelli G.**, Towards the Automatization of the Data Annotation Phase in Human Activity Recognition Based on Wearable Devices and BLE Beacons. In 2021 IEEE INERTIAL.	*Hawaii, USA*
2021 [C9]	**Demrozi F., Serlonghi N., Turetta C., Pravadelli C. and Pravadelli G.**, Exploiting BLE smart tags for virtual coaching. In 2021 IEEE World Forum on Internet of Things	*New Orleans, USA*

Under review papers

2021 [J4] **Demrozi F., Turetta C. and Pravadelli G.**, B-HAR: a Baseline framework for in depth study of Human Activity Recognition data. Under Review Process IEEE Internet of Things Journal. *Online*

2021 [J5] **Cesari P., Cristani M., Demrozi F., Pascucci F., Picotti M. P., Pravadelli G., Tomazzoli C., Turetta C., Workneh T. C., Zenti L.**, Biofeedback Technologies with wearable intelligent devices for posture and gait evaluation and improvement based on movement anticipation: experimental design. MDPI Sensors. *Online*

2021 [J5] **Demrozi F., Tonini F, and Pravadelli G.**, "Reducing the impact of the offline mapping phase in fingerprinting-based localization techniques. IEEE Sensors Journal. *Online*

2021 [J6] **Demrozi F., Turetta C., Bacchin R., Tamburin S., and Pravadelli P.**, A low-cost Wireless Body Area Network for Human Activity Recognition in Healthy Life and Medical Applications. IEEE Internet of Things Journal. *Online*

2021 [J7] **Mantovani E., Turetta C., Demrozi F., Tamburin S., and Pravadelli P.**, Wearable, sensors and other devices for the detection and monitoring of Chemotherapy Induced Peripheral Neuropathy (CIPN): systematic review and directions for future research. IEEE Journal of Biomedical and Health Informatics. *Online*

Competitions

International

2019 **Ph.D. Thesis Proposal**, Finalist at ACM Student Research Competition collocated with International Conference on Hardware/Software Codesign and System Synthesis (CODES+ISSS) *New York, USA*

2018 **ICT for Families (IFs)** , Project Leader, Semifinals of the Global Social Venture Competition (GSVC) *Milan, Italy*

National

2019 **BipBip**, Co-Pi, First Place European Social Fund (ESF) – Veneto Region *Padua, Italy*

2017 **ICT for Families (IFs)** , Project Leader, Best Social Innovation Project in Italy at National Innovation Award competition *Naples, Italy*

2017 **ADA**, Co-Pi, Finalist Veneto Start-Cup *Verona, Italy*

Presentations

IFIP/IEEE International Conference on Very Large Scale Integration-SoC (VLSI-SoC) *Verona, Italy*

Presenter *October 2018*

Article: A graph-based approach for mobile localization exploiting real and virtual landmarks
Ph.D Forum: An IoT based Virtual Coaching System (VSC) for Assisting Activities of Daily Life

ACM/IEEE Design, Automation & Test in Europe Conference & Exhibition (DATE) *Florence, Italy*

Presenter *March 2019*

Article: An indoor localization system to detect areas causing the freezing of gait in Parkinsonians

ACM/IEEE International Conference on Hardware/Software Codesign and System Synthesis (CODES+ISSS) *New York, USA*

Presenter *October 2019*

Ph.D. Forum: An IoT based Virtual Coaching System (VSC) for Assisting Activities of Daily Life
ACM Competition: An IoT based Virtual Coaching System (VSC) for Assisting Activities of Daily Life

IEEE Engineering in Medicine and Biology Society (EMBC) *Montreal, Canada*

Virtual Presenter *July 2020*

Article: Joint Distribution and Transitions of Pain and Activity in Critically Ill Patients

ACM/IEEE Design, Automation & Test in Europe Conference & Exhibition (DATE) *Grenoble, France*

Virtual Presenter *February 2021*

Article: A low-cost BLE-based distance estimation, occupancy detection and counting system

IEEE INERTIAL *Hawaii, USA*

Virtual Presenter *March 2021*

Article: Towards the Automatization of the Data Annotation Phase in Human Activity Recognition Based on Wearable Devices and BLE Beacons

IEEE 7th World Forum on Internet of Things *New Orleanse, USA*

Virtual Presenter *June 2021*

Article: Exploiting BLE smart tags for virtual coaching

Reviewer

Program Committee Member

2020- Present

Program Committee at IFIP/IEEE Forum on specification & Design Languages, September 15 - September 17, 2020, Kiel, Germany
Program Committee at IFIP/IEEE Forum on specification & Design Languages, September 8 - September 10, 2021, Antibes, France

Reviewer

2020- Present

IEEE Transactions on Emerging Topics in Computing (**TETC**)
IEEE International Conference on Emerging Technologies and Factory Automation (**ETFA**)
MDPI Sensors
IEEE International Conference on Sensing, Communication and Networking (**IEEE SECON**)
IEEE Transactions on Instrumentation and Measurement (**TIM**)
MDPI Applied Sciences
MDPI Electronics
MDPI Mathematics
IEEE Access
IEEE Sensors
Emerald Sensors

Secondary Reviewer

October 2016 - Present

IFIP/IEEE Forum on specification & Design Languages (**FDL**)
ACM/IEEE Design, Automation & Testin Europe Conference & Exhibition (**DATE**)
ACM/IEEE International Conference on Hardware/Software Codesign and System Synthesis (**CODES+ISSS**)
IFIP/IEEE International Conference on Very Large Scale Integration - System on a Chip (**VLSI-SOC**)
IEEE International Conference on VLSI Design and Embedded Systems (**VLSID & ES**)

Collegial Bodies Member

2020	**Member of the Didactic College,** Department of Computer Science, University of Verona	*Verona, Italy*
2021	**Member of the Didactic College,** Department of Computer Science, University of Verona	*Verona, Italy*

Organizing Committee Member

2018	**Local Arrangement Committee,** 1^{st} PhD School on Emerging Technologies for Design and Engineering of Electronics Systems (SCHEME), October 5 - 7	*Verona, Italy*
2018	**Web Chair,** IFIP/IEEE International Conference on Very Large Scale Integration-System on a Chip (VLSI-SoC), October 8 - 10	*Verona, Italy*
2018	**Local Arrangement Committee,** IFIP/IEEE International Conference on Very Large Scale Integration-System on a Chip (VLSI-SoC), October 8 - 10	*Verona, Italy*
2018	**Local Arrangement Committee,** ACM/IEEE Design, Automation & Test in Europe Conference & Exhibition (DATE) TPC meeting, October 28 - 29	*Florence, Italy*
2019	**Web Chair,** IFIP/IEEE Forum on specification & Design Languages (FDL), September 2 - 4	*Southampton, United Kingdom*
2020	**Web Chair,** IFIP/IEEE Forum on specification & Design Languages (FDL), September 15 - 17	*Kiel, Germany*
2021	**Web Chair,** IFIP/IEEE Forum on specification & Design Languages (FDL), September 8 - 10	*Antibes, France*

Proposal Writing

I have been regularly involved in writing proposals to different funding agencies, e.g.,to the Italian Ministry of Education, University and Research (MIUR), the Veneto region European Social Founds (FSE), the Michael J. Fox Foundation (MJFF) for Parkinson's Research, Brain Foundation, CariVerona Foundation, to private companies and other funding institutions, with an accepted project rate of almost 65%.

Received research grant

1500 Euros from the National Group for Scientific Calculation (GNCS) *Italy*

Funding for Young Researchers 2020 - 2021 *2020-2021*

12000 Euros from the Internationalization program TU Chemnitz, Faculty of Computer Science *Germany*

Funding for Post-Doc Visiting, October 2021-March 2022 *2021-2022*

Referees

Graziano Pravadelli PhD Supervisor, Full Professor, Department of Computer Science at University of Verona, graziano.pravadelli@univr.it

Parisa Rashidi Associate Professor, Department of Biomedical Engineering (BME) at University of Florida, parisa.rashidi@ufl.edu

Stefano Tamburin Associate Professor, Department of Neurosciences, Biomedicine and Movement at University of Verona, stefano.tamburin@univr.it

Franco Fummi Full Professor, Past Head of Department of Computer Science at University of Verona, franco.fummi@univr.it

Federico Fraccaroli Esq, Founder and President of Wagoo LLC, federico.fraccaroli@thewagoo.com

Other Additional referees are available upon request

Projects

ADA: Assisting Daily life Activities for people with special needs in a Ambient Assisted Living context. *FSE-Veneto Region*

Research Activity: Co-PI *2017-2018*

Bip-Bip: Detection of Freezing Of Gait in Parkinson's disease through Wearable devices. *FSE-Veneto Region*

Research Activity: Co-PI *2018-2019*

Smart-Pump: Intelligent assistive system to regulate the continuous administration of drugs in Parkinson's patients. *FSE-Veneto Region*

Research Activity: Co-PI *2020-2021*

BioFeedback: Study and development of customizable training courses aimed at improving postural quality through parameters suitable for pre-adolescents. *FSE-Veneto Region*

Research Activity: Co-PI *2020-2021*

An IoT infrastructure for monitoring motor fluctuations in Parkinson's disease. *Brain Research Foundation Verona O.N.L.U.S.*

Research Activity: Co-PI *2021-2022*

Language Skills

Albanian Bilingual

Italian Bilingual

Other languages English, Spanish

	Understanding		Speaking		Writing
	Listening	Reading	Spoken Interaction	Spoken Production	
English	C2	C2	C1	C1	C1
Spanish	B2	B1	A2	A2	A1

Extracurricular Activity

ICT for Families (IF's) Innovative Startup *Verona, Italy*

Project Leader *July 2017 - PRESENT*

Winner of the Best Social Innovation Project at PNI Italy 2017

Wagoo Italia s.r.l.s *Verona, Italy*

Project Manager *July 2017 - PRESENT*

Moramma Project (webpage)

Mentoring activities

Co-Advised Ten (10) M.S. Degree Students in Computer Science working on a thesis (or/and stage) project for at least 400 hours.

Co-Advised Twenty Four (24) B.S. Degree Students in Computer Science and Engineering working on a thesis (or/and stage) project for at least 150 hours.

Co-Advised Four (4) Scholarship Holders working in average for two years on a specific project.

Software Skills

Operating Systems Linux (Debian/Ubuntu/RedHat) Distributions, Windows

Tools Microsoft Office, Libre Office, Visual Studio, Git

Programming Python, C, C++, C#, JAVA, Matlab, HDL Languages, BASH, PHP, SQL, LaTeX

Markup Languages HTML, XHTML, CSS

Personal Skills

Motivated, Organized, Responsible, Accurate, Adaptable, Ambitious, Confident, Cooperative, Determined, Energetic, Independent, Versatile

Personal Interests

History, Geography, Music, Chess, Sport(Soccer), Swimming

Research Resume

My research interests concern system-level design of embedded systems and mainly their application in the Ambient Intelligence (AmI), Ambient Assisted Living (AAL) and Internet of Medical Things (IoMT) area. Concerning the embedded system design, during my master and Ph.D where published works related to Virtual Platform Design **[C1],[C3]** and Hardware Security **[C2]**, instead, with regard to their application, which at present covers almost all my activities, my research aims to extend current approaches and solutions for AmI, AAL and IoMT by defining a ubiquitous and non-invasive Virtual Coaching System (VCS) that allows people with cognitive and/or physical impairments learning new behaviors and avoid unwanted ones. VCS makes possible the interaction between daily life objects and wearable smart devices. Furthermore, it defines the basis for the creation of a smart environment **[C4]** which allows us to collect data concerning the interaction between objects and the people present in the environment**[C8]** and react accordingly to support elderly in daily life activities**[C5]**. While the general architecture of VCS can be exploited in different contexts, an application scenario where I have started to decline VCS is represented by the Freezing of Gait (FoG) in Parkinson Disease (PD) **[J1]** and at the moment i am working on the human activity recognition**[J2]** of the FoG pattern based on wearable devices. Most of the activities related to the use of embedded systems for virtual coaching are carried on as part of the **ADA**, **BipBip** and **Smart-Pump** projects, which involve the cooperation between computer scientists, medical doctors and psychologists.

Doctoral Thesis Resume

Nowadays aging of the population is becoming one of the main concerns of the world. It is estimated that the number of people aged over 65 will increase from 461 million to 2 billion in 2050. This substantial increment in the elderly population will have significant consequences in the social and health care system. Therefore, in the context of Ambient Intelligence (AmI), the Ambient Assisted Living (AAL) has been emerging as a new research area to address problems related to the aging of the population. AAL technologies based on embedded devices have demonstrated to be effective in alleviating the social- and health-care issues related to the continuous growing of the average age of the population. Many smart applications, devices and systems have been developed to monitor the health status of elderly, substitute them in the accomplishment of activities of the daily life (especially in presence of some impairment or disability), alert their caregivers in case of necessity and help them in recognizing risky situations. Such assistive technologies basically rely on the communication and interaction between body sensors, smart environments and smart devices. However, in such context less effort has been spent in designing smart solutions for empowering and supporting the self-efficacy of people with neurodegenerative diseases and elderly in general. This thesis fills in the gap by presenting a low-cost, non intrusive, and ubiquitous Virtual Coaching System (VCS) to support people in the acquisition of new behaviors (e.g., taking pills, drinking water, finding the right key, avoiding motor blocks) necessary to cope with needs derived from a change in their health status and a degradation of their cognitive capabilities as they age. VCS is based on the concept of extended mind introduced by Clark and Chalmers in 1998. They proposed the idea that objects within the environment function as a part of the mind. In my revisiting of the concept of extended mind, the VCS is composed of a set of smart objects that exploit the Internet of Things (IoT) technology and machine learning-based algorithms, in order to identify the needs of the users and react accordingly. In particular, the system exploits smart tags to transform objects commonly used by people (e.g., pillbox, bottle of water, keys) into smart objects, it monitors their usage according to their needs, and it incrementally guides them in the acquisition of new

behaviors related to their needs. To implement VCS, this thesis explores different research directions and challenges. First of all, it addresses the definition of a ubiquitous, non-invasive and low-cost indoor monitoring architecture by exploiting the IoT paradigm. Secondly, it deals with the necessity of developing solutions for implementing coaching actions and consequently monitoring human activities by analyzing the interaction between people and smart objects. Finally, it focuses on the design of low-cost localization systems for indoor environment, since knowing the position of a person provides VCS with essential information to acquire information on performed activities and to prevent risky situations. In the end, the outcomes of these research directions have been integrated into a healthcare application scenario to implement a wearable system that prevents freezing of gait in people affected by Parkinson's Disease.

I authorise the handling of my personal data pursuant to the Personal Data Protection Code - Legislative Decree n. 196/03.

Approved: _____

Computer Science Department
University of Verona, Italy
October 26, 2021