

# Davide Calvaresi, Ph.D.

Curriculum Vitae, April 2018

Sierre

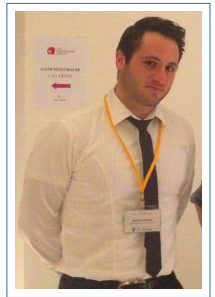
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## Work

- Since Apr'18 **Postdoctoral Research**, *University of Applied Science Western Switzerland (HES-SO)*, (AISLAB), Sierre, Switzerland  
Research Areas: Real-Time Multi-Agent Systems, Blockchain & MAS, Assistive and Tlerehabilitation Technologies.
- Apr'17–Apr'18 **Research Assistant**, *University of Applied Science Western Switzerland (HES-SO)*, (AISLAB), Sierre, Switzerland.
- Since 2015 **Co Founder**, *Wriggle Solutions s.r.l.s.*, Innovative Startup, Pisa, Italy.
- Since 2014 **Co Founder & Scientific Committee Member**, *"Polo Tecnico - Professionale per Domotica Assistenziale"*, Italy.
- 2013 **Freelance Engineer**, *Design and Development of a web based product*, CarbonMill s.n.c., Jesi, Italy.
- 2012 **Freelance Engineer**, *Personalization of a Customer Relationship Management*, STEP s.a.s, Jesi, Italy.

## Education

- 2014 - 2018 **Ph.D.**, in *Emerging Digital Technologies - Embedded Systems*,  
*Scuola Superiore Sant'Anna*, Pisa, Italy.,  
Research Areas: RT-MAS, Assistive and Tlerehabilitation Technologies  
Thesis: Real-Time Multi-Agent Systems: challenges, model, and performace analysis  
Supervisor: Prof. Giorgio Buttazzo.
- 2011 – 2014 **M.Sc.** in Computer and Automation Engineering,  
*Università Politecnica delle Marche*, Ancona, Italy, *Italian Mark 105/110*.  
Thesis: *Requirement Engineering on a Wide Domain: i\* Modeling of the Ambient Assisted Living*,  
Supervisors: Prof(s). A. F. Dragoni, Eric Yu, & Arnon Sturm at: Computer Science, University of Toronto, Canada.
- 2005 – 2011 **B.Sc.** in Computer and Automation Engineering,  
*Università Politecnica delle Marche*, Ancona, Italy, *Italian Mark 94/110*.  
Thesis: *Study of an UPnP standard extension for the semantic description of heterogeneous devices in home automation environment*,  
Supervisors: Prof. Francesco Piazza & Dr. Michele Nucci, at: Università Politecnica delle Marche, Ancona, Italy

## Awards - Grants - Patents

- Awards: **Best-Paper Award**, Venue: *X Workshop on Agents Applied in Health Care @ AAMAS*, May 2017.  
**GSVC2016, SMARTTyre Winner** of "Best social and environmental ICT Idea Award".  
**EGO Ericsson 2015, SMARTTyre Winner** of "Change makers for a connected society".  
**START CUP Toscana 2015, SMARTTyre Winner** of "Best business and high-tech ideas".
- Grants: **University of Évry**: 1<sup>st</sup> Agreement Technologies Winter School, Dec 2017.  
**University of Gdańsk**: 19<sup>th</sup> European Agent Systems Summer School, Aug 2017.  
**COST Action**: AAPELE (IC1303), Oct - Dec 2016.
- Patents: **SMARTTyre**, Patent n: 102015000079497.

## Additional Training

- December 2017 **Agreement Technologies Winter School**, *University of Évry*, Évry, France.  
Focused on autonomy, interaction, mobility, and openness of autonomous systems (In particular, Semantic alignment, negotiation, argumentation, virtual organisations, trust and reputation).
- August 2017 **European Agent Systems Summer School**, *University of Gdańsk*, Gdańsk, Poland.  
Focused on deepening the knowledge on several branches of autonomous systems (e.g. M.A. Reinforcement Learning, Learning' Dynamics, Security, Game Theory, Probabilistic Model Checking, Dynamic epistemic logic, Predicting Human Decision-Making).
- July 2015 **Summer School on Health and Wellbeing**, *EIT Digital, Philips Res. Lab & Holst Center*, Eindhoven, Netherlands.  
Focused on assessment, measurement and promotion of mental / physical fitness and well-being. Worked with an international team to develop HWB business models, innovation routes and revenue models.
- June 2015 **Summer School on Cyber Physical Systems**, *EIT ICT Lab & KTH*, Stockholm, Sweden.  
Focused on performing in industrial and academia environment CPS applications. Moreover, business coaching was provided throughout the summer school.

## Research Visits

- Oct – Mar'17 **Internship**, *University of Applied Science Western Switzerland, eHealth Division*, Sierre, Switzerland.  
Development of a real-time negotiation protocol for multi-agent systems applied to wearable devices for telerehabilitation.
- Aug – Feb'14 **Internship**, *University of Toronto*, Toronto, Canada, *Master Thesis*.  
Modelization of Ambient Assisted Living Domain using a Goal Oriented Requirement Engineering & *i\** modeling lang

## Academic Activities

- Pr. chair **RTcMAS 2018**.
- Pr. committee **A2HC 2017, AIH2018**.
- Reviewer **Journals**, *ACM Transactions on Cyber-Physical Systems, IEEE Transactions on Industrial Informatics*.  
**Conferences**, *AIH 2018, ICAART 2017, EPIA 2017, A2HC 2017, SAC 2016, RTSS-CPS 2016*.
- Supervisor **6 MSc and 3 BSc Thesis, n Courses-Projects**, among, UNIVPM, SSSUP, and HES-SO, ([link](#)).

## Given Lectures [L] and Invited Seminars [S]

- 2014 – 2016 **[L]: Leap Motion and Real Time**, *TeCIP - Scuola Superiore Sant'Anna, Italy*.
- Fall 2015 **[S]: Distributed Data Service (DDS)**, *TeCIP, Scuola Superiore Sant'Anna, Italy*.  
DDS middleware and its applications in the avionics and Assistive fields with emphasis on real-time constraints.
- Fall 2014 **[S]: Introduction to Agent Oriented Paradigm**, *TeCIP, Scuola Superiore Sant'Anna, Italy*.  
Agents concept, Multi Agent Paradigm and Software Engineering.
- Fall 2014 **[S]: Requirement Engineering**, *Univpm, Ancona, Italy*.  
Goal Oriented Requirement Engineering, Multi Agent Software Engineering and Ambient Assisted Living Modelization.
- Fall 2014 **[S]: Virtual Caregiver, a novel approach**, *Istituto d'Istruzione Superiore E. Fermi, Italy*.  
Overview on assistive technologies with emphasis on smart environments for elderly people.

## Research Projects

- 2015 **Silence MultiMedia**, *Team member*, TeCIP - Scuola Superiore Sant'Anna, Italy.  
Distributed embedded system for real time audio streaming with embedded and web management interfaces.
- 2013 **R&C - Autonomous Robot Competition**, *Team Leader*, D.I.I, Univpm, Italy, "presentation link".  
Intelligent robots competition. Expertise: Real Time scheduling, Artificial Intelligence, Jade, OpenCV.
- 2012 **Web Solver for Capacited Vehicle Routing Problem**, *Teamwork*, D.I.I., Univpm, Italy.  
Dynamic web Capacity Vehicle Routing Problem solver. Expertise: Operational Research, AMPL, Reg Exp.
- 2012 **Fault Detection in a wind farm**, *Teamwork*, D.I.I., Univpm, Italy.  
Fault Predictions and Diagnosis in wind turbines. Expertise: Matlab, Simulink, Neural Network.
- 2011 **Hive - Enterprise applications integration**, *Team Leader*, D.I.I., Univpm, Italy.  
Integration of (Kettle, SugarCRM, AlfrescoECM, OpenBravoERP) at web service and database level.

## Social Engagements

- 2014 – 2016 **PhD Student Representative in Academic Council** *Scuola Superiore Sant'Anna, Pisa*
- Since 2003 **Blood Donor - AVIS, Volunteer - First Aid**
- 2011 **Volunteer Staff at, SAC 2016, ADA-Europe 2016**.

## Certifications & Licenses

- 2015 **High Tech Business Venturing, Inside ICT & Robotic Driving License - B, A3** *Scuola Superiore Sant'Anna & Tuscan Academy Autovehicle, Motorbike*

## Languages

**Italian:** Native, **English:** Professional working proficiency - C1, **French:** Basic communication skills - A1.

## Hobbies

- Chess, Archery and Aeromodelism
- Team- and Solo-sports, Gym and Hiking
- Knowledge Sharing, Science and Technology
- Cooking, Music, Movies and Operas

## References

Person	Role	Institute	contact
◦ Prof. Giorgio Buttazzo	PhD Supervisor	Scuola Sup. Sant'Aanna	g.buttazzo@sssup.it
◦ Prof. Arnon Sturm	MSc Advisor	University of Toronto	sturm@bgu.ac.il
◦ Dr. Daniel Cesarini	PhD Tutor	Scuola Sup. Sant'Aanna	d.cesarini@sssup.it

## Publications

All the papers indicated by ( ✓ ) have been personally presented

- 2018 **Calvaresi D.**, Dubovitskaya A., Calbimonte J.P., Taveter K., & Schumacher M. *"Multi-Agent Systems and Blockchain: Results from a Systematic Literature Review"*, Proceeding of 16<sup>th</sup> International Conference on Practical Applications of Agents and Multi-Agent Systems, Toledo, Spain, Jun 20-22. (to appear) ( ✓ )
- 2018 Albanese G., **Calvaresi D.**, Sernani P., Dubosson F., Dragoni, A.F. & Schumacher M. *"MAXIM-GPRT: A Simulator of local Schedulers, Negotiations, and Communication for Multi-Agent Systems in General-Purpose and Real-Time Scenarios"*, Proceeding of 16<sup>th</sup> International Conference on Practical Applications of Agents and Multi-Agent Systems, Toledo, Spain, Jun 20-22. (to appear) ( ✓ )
- 2018 **Calvaresi D.**, Appoggetti K., Lustrissimini L., Marinoni M., Sernani P., Dragoni A.F., & Schumacher M. *"Multi-Agent Systems' Negotiation Protocols for Cyber-Physical Systems: Results from a Systematic Literature Review"*, Proceeding of 10<sup>th</sup> International Conference on Agents and Artificial Intelligence, Funchal, Madeira-Portugal, Jan 16-18. ( ✓ )
- 2017 **Calvaresi D.**, Marinoni M., Lustrissimini L., Appoggetti K., Sernani P., Dragoni A.F., Schumacher M., & Buttazzo G. *"Local Scheduling in Multi-Agent Systems: getting ready for safety-critical scenarios"*, Proceeding of 15<sup>th</sup> European Conference on Multi-Agent Systems, Evri, France, Dec 14-15. ( ✓ )
- 2017 Calbimonte J.P., **Calvaresi D.**, & Schumacher M. *"Multi-Agent Interactions on the Web through Linked Data Notifications"*, Proceeding of 15<sup>th</sup> European Conference on Multi-Agent Systems, Evri, France, Dec 14-15. ( ✓ )
- 2017 Buonocunto P., Giantomassi A., Marinoni M., **Calvaresi D.**, & Buttazzo G. *"A Limb Tracking Platform for Tele-Rehabilitation"*. ACM Transactions on Cyber-Physical Systems (TCPS), (to appear)
- 2017 **Calvaresi D.**, Marinoni M., Sturm A., Schumacher M., & Buttazzo G. *"The Challenge of Real-Time Multi-Agent Systems for Enabling IoT and CPS"*, Proceeding of IEEE/WIC/ACM International Conference on Web Intelligence (WI 2017), Leipzig, Germany, Aug 23-26. ( ✓ )
- 2017 **Calvaresi D.**, Schumacher M., Marinoni M., Hilfiker R., Dragoni A.F., & Buttazzo G. *Agent-based systems for telerehabilitation: strengths, limitations and future challenges"*, Post-Proceeding of the 10<sup>th</sup> Workshop on Agents Applied in Health Care @ AAMAS, S ao Paulo, Brazil, May 8-12. ( ✓ )
- 2017 Falcionelli N., Sernani P., Bromuri S., Mekuria D.N., **Calvaresi D.**, Schumacher M., Dragoni A.F., & Bragues A. *"An Event Calculus agent mind applied to diabetes monitoring"*, Post-Proceeding of the 10<sup>th</sup> Workshop on Agents Applied in Health Care @ AAMAS, S ao Paulo, Brazil, May 8-12. ( ✓ )
- 2016 **Calvaresi D.**, Vincentini A., Di Guardo A., Cesarini D., Sernani P., & Dragoni A.F. *"Exploiting a touchless interaction to drive a wireless mobile robot powered by a real-time operating system"*, Proceeding of the 2<sup>nd</sup> International Conference Recent Trends and Applications in Computer Science and Information Technology, Tirana, Albania, Nov 18-19.
- 2016 Montanaro L., Sernani P., **Calvaresi D.**, & Dragoni A.F. *"A touchless human-machine interface for the control of an elevator"*, Proceeding of the 2<sup>nd</sup> International Conference Recent Trends and Applications in Computer Science and Information Technology, Tirana, Albania, November 18-19.
- 2016 Cesarini D., **Calvaresi D.**, Farnesi C., Taddei D, Frediani S., Ungerechts B.E., & Hermann T.. *"MEDIATION: an eMbEddeD system for auditory feedback of hand-water InterAction while swimming"*, Proceeding of the 11<sup>th</sup> conference of the International Sports Engineering Association (ISEA 2016), Delft, Netherlands, July 11-14.
- 2016 Sernani P., **Calvaresi D.**, Calvaresi P., Pierdicca M., Morbidelli E., Dragoni A. F., & Buttazzo G. *"Testing Intelligent Solutions for the Ambient Assisted Living in a Simulator"*, Proceeding of the 9<sup>th</sup> International Conference on Pervasive Technologies Related to Assistive Environments (PETRA 2016), Corfu Island, Greece, June 29 - July 1.
- 2016 **Calvaresi D.**, Sernani P., Marinoni M., Claudi A., Balsini A., Dragoni A. F., & Buttazzo G. *"A Framework based on Real-Time OS and Multi-Agents for intelligent autonomous robot competitions"*, Proceeding of the 11<sup>th</sup> IEEE International Symposium on Industrial Embedded Systems (SIES 2016), Krakow, Poland, May 23-26. ( ✓ )
- 2016 **Calvaresi D.**, Cesarini D., Sernani P., Marinoni M., Dragoni A. F., & Sturm A.. *"Exploring the ambient assisted living domain: a systematic review"*. Journal of Ambient Intelligence and Humanized Computing, 1-19.
- 2015 **Calvaresi D.**, Cesarini D., Marinoni M., Buonocunto P., Bandinelli S., and Buttazzo G., *"Non-intrusive patient monitoring for supporting general practitioners in following diseases evolution"*, Proceedings of the 3<sup>rd</sup> International Work-Conference on Bioinformatics and Biomedical Engineering (IWBBIO 2015), Granada, Spain, April 15-17. ( ✓ )
- 2015 Cesarini D., **Calvaresi D.**, Marinoni M., Buonocunto P., and Buttazzo G. *"Simplifying the use of motor tele-rehabilitation devices for their practical use in non-clinical environments"*, Proceedings of the 3<sup>rd</sup> International Work-Conference on Bioinformatics and Biomedical Engineering (IWBBIO 2015), Granada, Spain, April 15-17. ( ✓ )
- 2014 Calvaresi, P., **Calvaresi, D.**, Sernani, P., Pierdicca, M., Morbidelli E., Accattoli, D., Dragoni, A.F.: *"A Virtual Caregiver for the AAL: Testing in a 3D Simulator"*. In: Workshop of the XIII AI\*IA Symposium on Artificial Intelligence (AI\*AAL.it 2014).

- 2014 Calvaresi, P., Dragoni, A.F., Pierdicca, M., **Calvaresi, D.**, Sernani, P.: *"3D Simulation for Ambient Assisted Living: Interaction through Mobile Application"*. In: 1<sup>st</sup> International Conference Recent Trends and Applications in Computer Science and Information Technology (RTA-CIST 2014).
- 2014 **Calvaresi, D.**, Sturm, A., Yu, E., Dragoni, A.F.: *"Exploring domain requirements and technology solutions: a goal modeling approach"*. In: Proceedings of the 7<sup>th</sup> International iStar Workshop (iStar 2014). ( ✓ )
- 2014 **Calvaresi, D.**, Claudi, A., Dragoni, A.F., Yu, E., Accattoli, D., Sernani, P.: *"A Goal-Oriented Requirements Engineering Approach for the Ambient Assisted Living Domain"*. in Proceedings of the the 7<sup>th</sup> ACM International Conference on Pervasive Technologies Related to Assistive Environments (PETRA 2014). ( ✓ )
- 2013 **Calvaresi D.**, Sturm A., and Yu E.: *"Reconciling System Design Options with Domain and Elicited Requirements - A Goal Modeling Approach"*. Poster Presentation in Consortium for Software Engineering Research, Fall 2013 Meeting, Markham, Ontario, CA, 2013. ( ✓ )