



Day 0 (22nd of October)

8:30 Registration

Space: Ceremonial Hall Cloister

9:00 - 13:00 1st Workshop on Cyber-Physical Social Systems for smart cities (CPSS)

Room: Garate

- SmartWorkplace: A Privacy-based Fog Computing Approach to Boost Energy Efficiency and Wellness in Digital Workplaces
- Enabling Citizen Science in Rural Environments with IoT and Mobile Technologies
- SLA-aware Approach for IoT Workflow Activities Placement based on Collaboration between Cloud and Edge
- Preserving Privacy in Cyber-physical-social systems: An Anonymity and Access Control Approach
- Internet of Threats Introspection in Dynamic Intelligent Virtual Sensing
- The CitySPIN Platform: A CPSS Environment for City-Wide Infrastructures - The Story So Far
- Cross-CPP – An Ecosystem for Provisioning, Consolidating, and Analysing Big Data from Cyber-Physical Products
- Challenges for Air Pollution Monitoring: a Cyber-Physical Social Systems Approach

13:00 - 14:00 Lunch

Space: Ceremonial Hall Cloister

14:00-18:00 Connected World/Web & Semantic Interoperability Workshop - (CWSI'19)

Room: Garate

- Towards Animal Welfare in Poultry Farms through Semantic Technologies
- Citizen Science over Big Data and IoT Technology for a Sustainable Living enabling Carbon Reduction
- Theoretical assessment of existing frameworks for data usage control: Strengths and limitations with respect to current application scenarios
- A survey on Trust Management Classification and its most common Methodologies for the Internet of Things
- Semantic Web Standards and its application in the Active and Healthy Ageing Area



Day 1 (23rd of October)

8:30 Registration

Space: Ceremonial Hall Cloister

9:00 Opening Ceremony (General and Local Chairs + University authorities + Sponsors)

9:30 1st Keynote Talk "The Smart Home Illusion" (Alexandra Deschamps-Sonsino, Designswarm, UK)

Room: Ceremonial Hall

10:30 Morning Break (coffee)

Space: Ceremonial Hall Cloister

11:00 - 12:30 Track Papers (Machine Learning - chair: Karin A. Hummel).

Room: Garate

- Providing Fault Tolerance via Complex Event Processing and Machine Learning for IoT Systems (*Alexander Power and Gerald Kotonya*)
- Interactive Machine Learning for the Internet of Things: A Case Study on Activity Detection (*Agnes Tegen, Paul Davidsson and Jan A. Persson*)
- Energy-Accuracy Tradeoff for Efficient Noise Monitoring and Prediction in Working sqEnvironments (*Frank Alexander Kraemer, Faiga Alawad and Ida Marie Bosch*)
- (short) The Makers' Beehives: Smart Beehives for Monitoring Honey-Bees' Activities (*Doreid Ammar, Jean Savinien and Lionel Radisson*)

12:45 - 14:00 Lunch

Space: Ceremonial Hall Cloister

14:00 - 15:30 Track Papers (IoT Edge and Cloud - chair: Frank A. Kraemer).

Room: Garate

- Using BPM Technology to Deploy and Manage Distributed Analytics in Collaborative IoT-Driven Business Scenarios (*Tim D'Hondt, Anna Wilbik, Heiko Ludwig, Nathalie Baracaldo, Ali Anwar and Paul Grefen*)
- Simplicity is Best: Addressing the Computational Cost of Machine Learning Classifiers in Constrained Edge Devices (*Oihane Gómez-Carmona, Diego Casado-Mansilla, Javier García-Zubia and Diego López-De-Ipiña*)
- MAPO: A Multi-Objective Model for IoT Application Placement in a Fog Environment (*Narges Mehran, Dragi Kimovski and Radu Prodan*)
- (short) IoT fault management in cloud/fog environments (*Giuseppe Di Modica, Samuele Gulino and Orazio Tomarchio*)

15:30 Afternoon Break (coffee)

Space: Ceremonial Hall Cloister

16:00 - 17:30 Track Papers Afternoon (Security - chair: Fatima Z. Benhamida)

Room: Garate

- Non-interactive Certificate Update Protocol for Efficient Authentication in IoT (*Li Duan, Yong Li and Lijun Liao*)
- Scalable Identity and Key Management for Publish-Subscribe Protocols in the Internet-of-Things (*Prashant Anantharaman, Kartik Palani and Sean W. Smith*)
- Blockchain-based Data Provenance for the Internet of Things (*Marten Sigwart, Michael Borkowski, Marco Peise, Stefan Schulte and Stefan Tai*)
- (short)Trusted Lightweight Communication for IoT Systems Using Hardware Security (*Arnaud Durand, Pascal Gremaud, Urs Gerber and Jacques Pasquier*)

17:45 Demos and Poster session.

Space: Ceremonial Hall Cloister

- Calibration Transfer for Food Recognition Models for E-Noses (*Andreas Seiderer, Chi Tai Dang and Elisabeth Andre*)
- Sensor Gym: Training Autonomous IoT Devices with Deep Reinforcement Learning (*Abdulmajid Murad, Frank Alexander Kraemer, Kerstin Bach and Gavin Taylor*)
- Human-Drone Teaming: Use Case Bookshelf Inventory (*Alexander Freistetters and Karin Anna Hummel*)
- Workflow-based Setup of Smart Devices in Mixed Reality (*Ronny Seiger, André Kühnert and Uwe Assmann*)
- Creating Awareness in Embedded Systems - IoT enabled Temp-Awareness in PLCs (*Richard Bjetak, Amer Kajmaković and Konrad Diwold*)
- Toward a Delay Tolerant Internet of Things (*Fatima Zohra Benhamida, Chahrazad Bennani, Diego Casado-Mansilla and Diego López-De-Ipiña*)
- An Interactive Interface for Bulk Software Deployment in IoT (*Farshid Tavakoli-zadeh, Hanbing Zhang and Sisay Aduugna Chala*)

19:00 Welcome reception (toast).

Space: Ceremonial Hall Cloister



Day 2 (24th of October)

9:00 Registration

Space: Ceremonial Hall Cloister

9:30 2nd Keynote Talk "Innovation Begins at Home" (Andy Stanford-Clark , IBM CTO - UK and Ireland)

Room: Ceremonial Hall

10:30 Morning Break (coffee)

Space: Ceremonial Hall Cloister

11:00 - 12:30 Track Papers (Real World / Interaction - chair: Iñaki Vazquez).

Room: Garate

- Achieving Accurate Room-Level Indoor Location Estimation with Emerging IoT Networks (*Jacob Biehl, Andreas Girgensohn and Mitesh Patel*)
- A Scalable Software Update Service for IoT Devices in Urban Scenarios (*Verónica Toro Betancur, José Viquez Zamora, Markku Antikainen and Mario Di Francesco*)
- Towards Identification of Packaged Products via Computer Vision (*Klaus Fuchs, Tobias Grundmann and Elgar Fleisch*)
- (short) Put that Hologram there - Probing Mobile Interaction Experiences for a Vision of Mixed Material Public Spaces (*Ilhan Aslan, Chi Tai Dang, Ruben Schlagowski, Michael Dietz, Fabian Brain and Elisabeth Andre*)

12:45 - 14:00 Lunch

Space: Ceremonial Hall Cloister

14:00 - 15:30 Track Papers (Societal Impact - chair: Paul Davidsson).

Room: Garate

- MyAQI: Context-aware Outdoor Air Pollution Monitoring System (*Daniel Schürholz, Meruyert Nurgazy, Arkady Zaslavsky, Prem Prakash Jayaraman, Sylvain Kubler, Karan Mitra and Saguna Saguna*)
- Real-time IoT Road Traffic Data Monitoring using LoRaWAN (*Adel Aneiba, Mohammad Albaarini and John Hayes*)
- Towards Somaesthetic Smarthome Designs: Exploring Potentials and Limitations of an Affective Mirror (*Chi Tai Dang, Ilhan Aslan, Florian Lingens, Tobias Baur and Elisabeth Andre*)
- (short) User Involvement Matters: The Side-Effects of Automated Smart Objects in Pro-environmental Behaviour (*Diego Casado-Mansilla, Pablo Garaizar and Diego López-De-Ipiña*)

15:30 Afternoon Break (coffee)

Space: Ceremonial Hall Cloister



16:00 - 17:30 Doctoral Consortium.

Room: Garate.

- Network Coding for IIoT Multi-Cloud Environments (*Mihail Zverev, Pablo Garrido, Ramon Agüero and Josu Bilbao*)
- Achieving Robust and Reliable Wireless Communications in Hostile In-Car Environments (*Daniel Kraus, Konrad Diwold, Peter Priller and Erich Leitgeb*)
- Asset-Oriented Access Control: Towards an IoT Framework (*Thomas Cattermole, Simon Docherty, David Pym and M. Angela Sasse*)
- A Novel Semantic Complex Event Processing (SCEP) Framework for Stream Processing (*Rose Yemson, Dhavalkumar Thakker and Savas Konur*)

19:30 Social Event (bus stop): Aspaldiko Restaurant 20.15



Day 3 (25th of October)

8:30 Registration

Space: Ceremonial Hall Cloister

9:00 3rd Keynote Talk “Programming and forming objects with modular robots to enable a programmable matter” (Benoît Piranda, Univ. Bourgogne-Franche-Comté, Institut FEMTO-ST, CNRS (France))

Room: Ceremonial Hall

10:00 - 11:30 Track Papers (Industrial Applications - chair: Simon Mayer).

Room: Garate

- Quality-aware Service Selection Approach for Adaptive Context Recognition in IoT (*Elif Eryilmaz, Frank Trollman and Sahin Albayrak*)
- Interoperable Digital Twins in IIoT Systems by Transformation of Information Models (*Marie Platenius-Mohr, Somayeh Malakuti, Sten Grüner and Thomas Goldschmidt*)
- How IOT and computer vision could improve the casting quality (*Iker Pastor-López, José Gaviria de La Puerta, Borja Sanz, Aitor Goti and Pablo García Bringas*)
- (short) Embracing Opportunities of Livestock Big Data Integration with Privacy Constraints (*Franz Papst, Olga Saukh, Kay Roemer, Florian Grandl, Igor Jakovljevic, Franz Steininger, Martin Mayerhofer, Jürgen Duda and Christa Egger-Danner*)

11:30 Morning Break (brunch)

Space: Ceremonial Hall Cloister

12:00 - 13:20 Track Papers (Web of Things - chair: Matthias Kovatsch).

Room: Garate

- Enabling easy Web of Things compatible device generation using a Model-Driven Engineering approach (*Markel Iglesias-Urkia, Abel Gómez, Diego Casado-Mansilla and Aitor Urbieta*)
- Escaping the Streetlight Effect: Semantic Hypermedia Search Enhances Autonomous Behavior in the Web of Things (*Simon Bienz, Andrei Ciortea, Simon Mayer, Fabien Gandon and Olivier Corby*)
- (short) WoTbench: A Benchmarking Framework for the Web of Things (*Raoufeh Hashemian, Niklas Carlsson, Diwakar Krishnamurthy and Martin Arlitt*)
- (short) Privacy-Preserving IoT Cloud Data Processing Using SGX (*Pascal Gremaud, Arnaud Durand and Jacques Pasquier*)

13:30 - Closing Ceremony + Welcome IoT 2020

Room: Garate