



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA



The 24th ACM/IFIP
International Middleware Conference
11th – 15th December 2023

Department of History, culture and
civilization

University of Bologna, Italy

FULL PROGRAM

Monday, 11 December

Time (CET)	Room: Aula Giorgio Prodi (Ground floor)	Room: Aula Lucio Gambi (First floor)
8:15 -	Registration desk opens (Room: Antistante 1 - Ground floor)	
9:00 - 10:30	MiddleWEdge	Mid4CC
10:30 - 11:00	Coffee Break	
11:00 - 12:30	MiddleWEdge	Mid4CC
12:30 - 13:30	Lunch	
13:30 - 15:00	WoSC	WoC
15:00 - 15:30	Coffee Break	
15:30 - 17:00	WoSC	DIFM
17:00 - 18:30	WoSC	



Tuesday, 12 December



Time (CET)	Room: Aula Giorgio Prodi (Ground floor)	Room: Antistante 2 (Ground floor)
8:15 -	Registration desk opens (Room: Antistante 1 - Ground floor)	
9:00 - 10:30	DICG	Doctoral Symposium
10:30 - 11:00	Coffee Break	
11:00 - 12:30	DICG	Doctoral Symposium
12:30 - 13:30	Lunch	
13:30 - 15:00	DICG	Doctoral Symposium
15:00 - 15:30	Coffee Break	
15:30 - 17:00	Midd4DT	Doctoral Symposium Demos/Posters Lightning Talks
17:00 - 18:30	Midd4DT	

Main conference Program

Wednesday, 13 December

Time (CET)	Room: Aula Giorgio Prodi (Ground floor)
8:15 -	Registration desk opens
9:00 - 9:30	Welcome, opening, and pitch for next year
9:30 - 10:30	Keynote 1 - Rodrigo Fonseca, Microsoft, USA “Research Challenges for a Future Serverless Cloud”
10:30 - 11:00	Coffee break
11:00 - 12:30	Session 1A - Serverless Session chair: Jan Rellermeyer (Leibniz University Hannover) <u>Smartpick: Workload Prediction for Serverless-enabled Scalable Data Analytics Systems</u> (Anshuman Das Mohapatra, Kwangsung Oh (University of Nebraska Omaha)) <u>Kernel-as-a-Service: A Serverless Programming Model for Heterogeneous Hardware Accelerators</u> (Tobias Pfandzelter (Technische Universität Berlin & Einstein Center Digital Future), Aditya Dhakal, Eitan Frachtenberg, Sai Rahul Chalamalasetti, Darel Emmot, Ninad Hogade, Rolando Pablo Hong Enriquez, Gourav Rattihalli (Hewlett Packard Labs); David Bermbach (Technische Universität Berlin & Einstein Center Digital Future); Dejan Milojicic (Hewlett Packard Labs)) <u>Glider: Serverless Ephemeral Stateful Near-Data Computation</u>



Time (CET)	Room: Aula Giorgio Prodi (Ground floor)
	<p>(Daniel Barcelona-Pons, Pedro García-López (Universitat Rovira i Virgili); Bernard Metzler (IBM Research Europe))</p> <p><u>SnapStore: A Snapshot Storage System for Serverless</u> (Abhisek Panda, Smruti R. Sarangi (IIT Delhi))</p>
12:30 - 13:30	Lunch
13:30 - 15:00	<p>Session 1B - Security Session chair: Sara Bouchenak (INSA Lyon)</p> <p><u>SinClave: Hardware-assisted Singletons for TEEs</u> (Franz Gregor, Robert Krahn (TU Dresden); Do Le Quoc (Huawei Research); Christof Fetzner (TU Dresden, Germany))</p> <p><u>SecV: Secure Code Partitioning via Multi-Language Secure Values</u> (Peterson Yuhala (University of Neuchatel, Switzerland); Hugo Guiroux (Oracle Labs); Jean-Pierre Lozi (Inria); Pascal Felber, Valerio Schiavoni (University of Neuchatel, Switzerland); Alain Tchana (Grenoble INP); Gaël Thomas (Télécom SudParis - Institut Polytechnique de Paris))</p> <p><u>Trustworthy confidential virtual machines for the masses</u> (Anna Galanou (TU Dresden, Germany); Khushboo Bindlish (DFINITY); Luca Preibsch (Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU)); Yvonne-Anne Pignolet (DFINITY); Christof Fetzner (TU Dresden, Germany); Rüdiger Kapitza (Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU)))</p> <p>  <u>DynaCut: A Framework for Dynamic and Adaptive Program Customization</u> (Abhijit Mahurkar, Xiaoguang Wang (Virginia Tech); Hang Zhang (Georgia Institute of Technology); Binoy Ravindran (Virginia Tech))</p>

Time (CET)	Room: Aula Giorgio Prodi (Ground floor)
15:00 - 15:30	Coffee break
15:30 - 17:00	<p>Session 1C - Decentralized Systems Session chair: Mohammad Sadoghi (UC Davis)</p> <p> <u>An End-to-End Performance Comparison of Seven Permissioned Blockchain Systems</u> (Frank Christian Geyer (Munich University of Applied Sciences); Hans-Arno Jacobsen (University of Toronto); Ruben Mayer (University of Bayreuth); Peter Mandl (Munich University of Applied Sciences))</p> <p><u>LØ: An Accountable Base Layer for Permissionless Blockchains</u> (Bulat Nasrulin (TU Delft); Georgy Ishmaev (Delft University of Technology); Jérémie Decouchant (TU Delft); Johan Pouwelse (Delft University of Technology))</p> <p> <u>OrderlessChain: A CRDT-based BFT Coordination-free Blockchain Without Global Order of Transactions</u> (Pezhman Nasirifard (Technical University of Munich); Ruben Mayer (University of Bayreuth); Hans-Arno Jacobsen (University of Toronto))</p> <p><u>BASALT: A Rock-Solid Byzantine-Tolerant Peer Sampling for Very Large Decentralized Networks</u> (Alex Auvolat (Deuxfleurs, France); Yérom-David Bromberg, Djob Mvondo, Davide Frey, Francois Taiani (Univ Rennes, CNRS, Inria, IRISA))</p>
17:00 - 19:00	<p>Reception with Demo and Posters Demo and Posters will be available in the conf rooms and the cloister</p>



Thursday, 14 December

Time (CET)	Room: Aula Giorgio Prodi (Ground floor)
8:15 -	Registration desk opens (Room: Antistante 1 - Ground floor)
9:00 - 10:00	Keynote 2 - Lorenzo Alvisi, Cornell University, USA “Orderrr! State Machine Replication in the Age of Blockchains”
10:00 - 10:30	Coffee break
10:30 - 12:00	Session 2A – Industry Session (Security and Safety) <u>LogDAPT: Log Data Anomaly Detection with Domain-Adaptive Pretraining</u> <u>Mr-TEE: Practical Trusted Execution of Mixed-Criticality Code</u> <u>CNN-BiLSTM-Based Classification of RPL Attacks in IoT Smart Grid Networks</u> <u>Federated Computing in Electric Vehicles to Predict Coolant Temperature</u>
12:00 - 13:00	Lunch
13:00 - 14:30	Session 2B – Industry Session (Performance) <u>Practical Storage-Compute Elasticity for Stream Data Processing</u> <u>Distributed Asynchronous Regular Path Queries (RPQs) on Graphs</u> <u>FastXenBlk: high-performance virtualized disk IOs without compromising isolation</u>
14:30 - 15:00	General Assembly Community Meeting
15:00 - 15:30	Coffee break
15:30 - 19:30	Time to explore the city on your own!
19:30 - 23:00	Banquet Traditional restaurant in the same downtown area of the main conf

Friday, 15 December

Time (CET)	Room: Aula Giorgio Prodi (Ground floor)
8:15 -	Registration desk opens (Room: Antistante 1 - Ground floor)
8:30 - 10:00	<p>Session 3A - Distributed Computing Session chair: Jérémie Decouchant (TU Delft)</p> <p><u>EESMR: Energy Efficient BFT---SMR for the masses</u> (Adithya Bhat, Akhil Bandarupalli, Manish Nagaraj, Saurabh Bagchi, Aniket Kate (Purdue University); Michael K. Reiter (Duke University))</p> <p>  <u>Bridging the Gap of Timing Assumptions in Byzantine Consensus</u> (Zixuan Chen, Lei Fan, Shengyun Liu (Shanghai Jiao Tong University); Marko Vukolić (Protocol Labs); Xiangzhe Wang (Shanghai Jiao Tong University); Jingjing Zhang (Fudan University))</p> <p><u>PrimCast: A Latency-Efficient Atomic Multicast</u> (Leandro Pacheco (Università della Svizzera italiana (USI), Switzerland); Paulo Coelho (Federal University of Uberlandia, Brazil); Fernando Pedone (Università della Svizzera italiana (USI), Switzerland))</p> <p><u>FlexCast: genuine overlay-based atomic multicast</u> (Eliã Batista (Università della Svizzera italiana); Paulo Coelho (Universidade Federal de Uberlândia); Eduardo Alchieri (Universidade de Brasília); Fernando Dotti (Pontificia Universidade Catolica do Rio Grande do Sul); Fernando Pedone (Università della Svizzera italiana))</p>
10:00 - 10:30	<p>Test-of-Time Award Middleware 2023</p> <p><u>Testing Idempotence for Infrastructure as Code</u> (from Middleware 2013)</p> <p>Waldemar Hummer, Florian Rosenberg, Fabio A. Oliveira, Tamar Eilam</p>

Time (CET)	Room: Aula Giorgio Prodi (Ground floor)
10:30 - 11:00	Coffee break
11:00 - 12:30	<p>Session 3B - Data Analytics and Machine Learning Systems Session chair: Dilma Da Silva (Texas A&M University)</p> <p><u>Characterizing Distributed Machine Learning Workloads on Apache Spark</u> (Experimentation and Deployment Paper) (Yasmine Djebrouni (University of Grenoble Alps); Isabelly Rocha (University of Neuchatel, Switzerland); Sara Bouchenak (INSA Lyon); Lydia Y. Chen (TU Delft); Pascal Felber (University of Neuchatel, Switzerland); Vania Marangozova (University of Grenoble Alps); Valerio Schiavoni (University of Neuchatel, Switzerland))</p> <p><u>Pravega: A Tiered Storage System for Data Streams</u> (Raúl Gracia-Tinedo, Flavio Junqueira, Tom Kaitchuck, Sachin Joshi (Dell Technologies))</p> <p><u>FLIPS: Federated Learning using Intelligent Participant Selection</u>(Rahul Atul Bhope (UC Irvine); K. R. Jayaram (IBM Research, NY, USA); Nalini Venkatasubramanian (UC Irvine); Ashish Verma (Amazon Inc.); Gegi Thomas (IBM Research, NY, USA))</p> <p><u>Systematic Analysis of DDS Implementations</u> (Vincent Bode (Technical University of Munich); David Buettner, Tobias Preclik (Siemens AG); Carsten Trinitis, Martin Schulz (Technical University of Munich))</p>
12:30 - 13:30	Lunch
13:30 - 15:00	<p>Session 3C - Cloud Computing Session chair: Davide Frey (Inria de l'université de Rennes)</p> <p><u>Fast VM Replication on Heterogeneous Hypervisors for Robust</u></p>

Time (CET)	Room: Aula Giorgio Prodi (Ground floor)
	<p><u>Fault Tolerance</u> (Jean-Baptiste Decourcelle, Tu Dinh Ngoc, Boris Teabe, Daniel Hagimont (IRIT, Université de Toulouse, CNRS, Toulouse INP, UT3, Toulouse, France))</p> <p><u>Sora: A Latency Sensitive Approach for Microservice Soft Resource Adaptation</u> (Jianshu Liu, Qingyang Wang (Louisiana State University); Shungeng Zhang (Augusta University); Liting Hu (University of California Santa Cruz); Dilma Da Silva (Texas A&M University))</p> <p>  <u>INSANE: A Unified Middleware for QoS-aware Network Acceleration in Edge Cloud Computing</u> (Lorenzo Rosa, Andrea Garbugli, Antonio Corradi, Paolo Bellavista (University of Bologna))</p> <p><u>Fast, Lightweight, and Accurate Performance Evaluation using Representative Datacenter Behaviors</u> (Jaewon Lee (Meta); Dongmoon Min, Ilkwon Byun (Seoul National University); Hanhwi Jang (Ajou University); Jangwoo Kim (Seoul National University))</p>
15:00 - 15:30	Conference closing

Session Details

Monday, December 11th

Workshop MiddleWEdge

Room: Aula Giorgio Prodi (Ground floor)

9:00 - 10:00 Keynote: Challenges and Opportunities in Edge-Cloud Application Development through QoS-aware Middleware Solutions. Armir Bujari (University of Bologna)

10:00 - 10:30 Offloading Real-Time Tasks in IIoT Environments under Consideration of Networking Uncertainties. Ilja Behnke, Philipp Wiesner, Paul Voelker, Odej Kao (Technische Universität Berlin)

10:30 - 11:00 Coffee break

11:00 - 11:30 On the adversarial robustness of full integer quantized TinyML models at the edge. Davy Preuveneers, Willem Verheyen, Sander Joos, Wouter Joosen (KU Leuven)

11:30 - 12:00 Performance Characterization of MQTT Brokers in a Device-Local Edge Deployment. Guillaume Simard, Cédric Melançon, Patrick Cardinal, Julien Gascon-Samson (ÉTS Montréal)

12:00 - 12:30 Enoki: Stateful Distributed FaaS from Edge to Cloud. Tobias Pfandzelter, David Bermbach (Technische Universität Berlin & Einstein Center Digital Future)

12:30 Closing

Workshop WoSC

Room: Aula Giorgio Prodi (Ground floor)

13:30 - 13:35 Welcome (Aleksander Slominski and Pedro García Lopez)

13:35 - 14:35 Keynote: Short-lived Clouds, Dr. Javier Picorel (Huawei Cloud R&D in Huawei's Munich Research Center)

14:35 - 15:00 Session 1

Characterizing AFCL Serverless Scientific Workflows in Federated FaaS, Mika Hautz (University of Innsbruck), Sashko Ristov (University of Innsbruck), Michael Felderer (German Aerospace Center (DLR))

Scaling a Variant Calling Genomics Pipeline with FaaS, Aitor Arjona (Universitat Rovira i Virgili), Arnau Gabriel-Atienza (Universitat Rovira i Virgili), Sara Lanuza-Orna (Universitat Rovira i Virgili), Xavier Roca-Canals (Universitat Rovira i Virgili), Ayman Bourramouss (Universitat Rovira i Virgili), Tyler K. Chafin (Biomathematics and Statistics Scotland), Lucio Marcello (Biomathematics and Statistics Scotland), Paolo Ribeca (Biomathematics and Statistics Scotland), Pedro Garcia-Lopez (Universitat Rovira i Virgili)

ProFaaSinate: Delaying Serverless Function Calls to Optimize Platform Performance, Trever Schirmer (TU Berlin & ECDF), Valentin Carl (TU Berlin & ECDF), Tobias Pfandzelter (TU Berlin & ECDF), David Bermbach (TU Berlin & ECDF)

X86 vs. ARM: An Investigation of Factors Influencing Serverless Performance, Xinghan Chen (University of Washington), Robert Cordingly (University of Washington), Ling-Hong Hung (University of Washington), Wes Lloyd (University of Washington)

15:00 - 15:30 Coffee break

15:30 - 16:20 Session 2

Efficiently Detecting Performance Changes in FaaS Application Releases, Martin Grambow (TU Berlin, Mobile Cloud Computing Research Group), Tim Dockenfuß (TU Berlin, Mobile Cloud Computing Research Group), Trever Schirmer (TU Berlin, Mobile Cloud Computing Research Group), Nils Japke (TU Berlin, Mobile Cloud Computing Research Group), David Bermbach (TU Berlin, Mobile Cloud Computing Research Group)

Leveraging Intra-Function Parallelism in Serverless Machine Learning, Ionut Predoaia (University of York), Pedro Garcia Lopez (Universitat Rovira i Virgili)

When Serverless Computing Meets Different Degrees of Customization for DNN Inference, Moohyun Song (Kookmin University), Yoonseo Hur (Kookmin University), Kyungyong Lee (Kookmin University)

On Serving Image Classification Models, Aurora González Vidal (University of Murcia), Alexander Isenko (Technical University of Munich), K. R. Jayaram (IBM Research, NY, USA)

16:30 - 17:20 Session 3

Nubes: Object-Oriented Programming for Stateful Serverless Functions, Kinga Anna Marek (Politecnico di Milano, Italy), Luca De Martini (Politecnico di Milano, Italy), Alessandro Margara (Politecnico di Milano, Italy)

GreenCourier: Carbon-Aware Scheduling for Serverless Functions, Mohak Chadha (Technische Universität München), Thandayuthapani Subramanian, (Technische Universität München), Eishi Arima (Technische Universität München), Michael Gerndt (Technische Universität München), Martin Schulz (Technische Universität München), Osama Abboud (Huawei Technologies)

GIRAFF: Reverse Auction-based Placement for Fog Functions heterogeneous hardware, Volodia PAROL-GUARINO (Centre INRIA de l'Université de Rennes), Nikos Parlavantzas (IRISA)

16:30 - 18:30 Session 4 (Demos and short talks)

Simulate Data-Aware Serverless Workflows in Federated FaaS with SimLess (demo), Sashko Ristov (University of Innsbruck), Mika Hautz (University of Innsbruck)

Serverless Edge Computing: challenges and opportunities stemming from heterogeneous hardware (demo), Tomasz Szydio (AGH University of Cracow)

Databaseless Queries: Using Calcite as Research Testbed for Hybrid Cloud Data Integration (short talk), Josef Spillner (Zurich University of Applied Sciences)

Engineering Serverless Workflows With Interoperable BaaS Services (short talk), Sashko Ristov (University of Innsbruck)

Generating Synthetic Ansible Programs with Probabilistic Methods (short talk), Nathanael Nussbaumer (TU Wien), Louis Mandel (IBM Research), Guillaume Baudart (ENS - PSL University - CNRS - Inria), Martin Hirzel (IBM Research), Jürgen Cito (TU Wien)

AI for Smart Environments and Dimensionality Reduction (short talk), Antonio Martínez Ibarra (University of Murcia)

Optimizing Inference for Small Models in Memory-Limited GPU Environments (short talk), Pol G. Recasens (UPC&BSC), Chen Wang (IBM), Yue Zhu (IBM), Jordi Torres (UPC&BSC), Josep LLuis Berral (UPC&BSC)

FL-based automated & real-time cyber-attack detection (short talk), Pablo Fernández Saura (University of Murcia)

Severless Confidential Containers: Challenges and Opportunities (short talk), Carlos Segarra (Imperial College London), Tobin Feldman-Fitzthum (IBM Research), Daniele Buono (IBM Research)

18:30 - 18:50 End of Workshop

Workshop Mid4CC

Room: Aula Lucio Gambi (First floor)

Workshop Chairs: Antonino Galletta (University of Messina), Giuseppe Di Modica (University of Bologna)

09:00 - 09:15 Opening

09:15 - 09:40 BlazeFlow: a Multi-Layer Communication Middleware for Real-Time Distributed IoT Applications, Cédric Melançon (Department of Electrical Engineering, ETS Montreal / University of Quebec), Guillaume Simard (Department of Software and IT Engineering, ETS Montreal / University of Quebec), Maarouf Saad (Department of Electrical Engineering, ETS Montreal / University of Quebec), Kuljeet Kaur (Department of Electrical Engineering, ETS Montreal / University of Quebec), Julien Gascon-Samson (Department of Software and IT Engineering, ETS Montreal / University of Quebec)

09:40 - 10:05 Orchestrating serverless applications in the Cloud-to-Edge continuum, Angelo Marchese (University of Catania), Orazio Tomarchio (University of Catania)

10:05 - 09:10 Secure and Lightweight Access Control for Highly Decentralized and Distributed File Systems, Yeongbin Jo (Hanyang University), Yunsang Cho (Hanyang University), Hokeun Kim (Arizona State University)

10:30 - 11:00 Coffee break

11:00 - 11:25 An Analysis about Federated Learning in Low-Powerful Devices, Daniel Flores-Martin (Universidad de Extremadura), Jaime Galán-Jiménez (Universidad de Extremadura), Javier Berrocal (Universidad de Extremadura), Juan M Murillo (Universidad de Extremadura)

11:25 - 11:50 An Optimized Blockchain-based Data Transmission System for Telemedicine, Antonino Galletta (University of Messina), Armando Ruggeri (University of Messina), Massimo Villari (Università di Messina)

11:50 - 12:15 Benchmarks for Job Scheduling in Ultra-Distributed Systems, Kundjanasith Thonglek (Cybermedia Center, Osaka University), Chonho Lee (Cybermedia Center, Osaka University), Hirotake Abe (Cybermedia Center, Osaka University), Arata Endo (Cybermedia Center, Osaka University), Takahiro Hirofuchi (National Institute of Advanced Industrial Science and Technology), Ryousei Takano (National Institute of Advanced Industrial Science and Technology, Japan), Kohei Taniguchi (Cybermedia Center, Osaka University), Susumu Date (Cybermedia Center, Osaka University)

12:15 - 12:30 Closing

Workshop WoC

Room: Aula Lucio Gambi (First floor)

Workshop Chairs: Ali Kanso (Microsoft), Abdelouahed Gherbi (Ecole de Technologie Supérieure, Montreal, Canada)

13:30 - 14:00 Container Sizing for Microservices with Dynamic Workloads by Online Optimization

14:00 - 14:30 Understanding Container Isolation: An Investigation of Performance Implications of Container Runtimes

14:30 - 15:00 Towards Optimal Preemptive GPU Time-Sharing for Edge Model Serving

Workshop DIFM

Room: Aula Lucio Gambi (First floor)

Tuesday, December 12th

Workshop DICG

Room: Aula Giorgio Prodi (Ground floor)

09:00 - 09:10 Welcome

09:10 - 09:55 Keynote, Bryan Ford (École Polytechnique Fédérale de Lausanne)

Session 1 (Session chair: Georgy Ishmaev)

10:00 - 10:30 Designing Peer-to-Peer Systems as Closed Knowledge Commons, Erick Lavoie (University of Basel)

10:30 - 11:00 Coffee break

11:00 - 11:25 Tokenization of the Common: An Economic Model of Multidimensional Incentives, Benjamin Kraner (University of Zurich) , Nicolò Vallarano (University of Zurich) , Claudio J. Tessone (University of Zurich)

Session 2 (Session chair: Bulat Nasrulin)

11:25 - 11:50 Can Smart Contracts Become Smart? An Overview of Transaction Impact on Ethereum DApp Engineering, Emanuel Onica (Alexandru Ioan Cuza University of Iasi), Marius Georgica (Alexandru Ioan Cuza University of Iasi)

12:00 - 12:25 Attacks on Rollups, Adrian Koegel (Columbia University, Quantstamp), Zeeshan Meghji (Quantstamp), Donato Pellegrino (Quantstamp) Jan Gorzny (University of Waterloo, Quantstamp) Martin Derka (Quantstamp)

12:30 - 13:30 Lunch break

Session 3 (Session chair: Erick Lavoie)

13:30 - 13:55 Quantifying the Performance of Conflict-free Replicated Data Types in InterPlanetary File System, Quentin Acher (INRIA), Claudia-Lavinia Ignat (INRIA), Shadi Ibrahim (INRIA)

13:55 - 14:20 I'm InterPlanetary, Get Me Out of Here! Accessing IPFS From Restrictive Environments, Leonhard Balduf (Technische Universität Darmstadt), Sebastian Rust (Technische Universität Darmstadt), Björn Scheuermann (Technische Universität Darmstadt)

14:20 - 14:45 Toward Competitive Serverless Deep Learning, Stefan Petrescu (Universität Hannover), Diego Albo Martinez (Universität Hannover), Jan S. Rellermeier (Universität Hannover)

Please visit <https://dicg-workshop.github.io/2023/> for more details.

Workshop Midd4DT

Room: Aula Giorgio Prodi (Ground floor)

15:30 - 16:30 Keynote: Machine Learning in Digital Twin Edge Networks, Prof. Yan Zhang, University of Oslo, Norway

16:30 - 17:00 Articulating Data and Control Planes for the Composition and Synchronization of Digital, Dan Freeman Mahoro (Orange Labs, France), Thomas Ledoux (IMT Atlantique, France), Thomas Hassan (Orange Labs, France), Thierry Coupaye (Orange Labs, France)

17:00 - 17:30 Using Middleware and Digital Twin to Enable Agronomic Produce Tracking on Mobile Devices, Richard Lomotey (Pennsylvania State University, USA), Sandra Kumi (University of Saskatchewan, Canada), Ralph Deters (University of Saskatchewan, Canada), Maxwell Hilton (Pennsylvania State University, Canada), Charlie Snow (Pennsylvania State University, Canada)

17:30 - 18:00 Middleware for Digital Twins: A Systematic Mapping Study, Andre Almeida (Federal Institute of Rio Grande do Norte, Brasil), Thais Batista (Federal University of Rio Grande do Norte, Brasil), Everton Cavalcante (Federal University of Rio Grande do Norte, Brasil), Flávia Delicato (Fluminense Federal University, Brasil), Rebeca Motta (Fluminense Federal University, Brasil), Marco Vieira (University of North Carolina at Charlotte, USA)

18:00 - 18:30 DEMSA: a DT-enabled Middleware for Self-adaptive Smart Spaces, Jun Ma (Télécom SudParis, IP Paris, France), Georgios Bouloukakis (Télécom SudParis, IP Paris, France), Ajay Kattepur (Ericsson Research), Roberto Yus (University of Maryland, Baltimore County), Denis Conan (Télécom SudParis, IP Paris, France)

Please visit <https://hakiri.github.io/Midd4DT/> for more details.

Doctoral Symposium

Room: Antistante 2 (Ground floor)

Note: Each presentation is allocated 20 minutes for their talk, plus an additional 5 minutes for questions and answers.

9:00 - 10:30 (Cloud and Serverless Computing)

Sky Computing for Serverless (Robert Cordingly (University of Washington))

Serverless Abstractions for Edge Computing in Large Low-Earth Orbit Satellite Networks, (Tobias Pfandzelter (Technische Universität Berlin))

SBetter Orchestration for SLO-Oriented Cross-site Microservices in Multi-tenant Cloud/Edge Continuum, (Yinan Cao (UCLouvain))

11:00 - 12:30 (Blockchain and Decentralized Applications)

Decentralized Service Composition Applications (dXapps): Towards A new Paradigm for Building Blockchain Applications, (Sion Israel Sion (École de Technologie Supérieure))

Towards a User-Centric Decentralized Web: Lightweight Clients as First-class Blockchain Citizens, (Weihong Wang (KU Leuven))

Towards Effective yet Frugal Blockchain Network Emulation, (Vincenzo Di Perna (University of Urbino))

12:30 - 13:30 Lunch break

13:30 - 15:00 (Security, Privacy, and Access Control)

Secure and Scalable Policy Management in Cloud Native Networking, (Gerald Budigiri (KU Leuven))

Attacks and Defenses for ML-enhanced Access Control, (Javier Martínez Llamas (DistriNet KU Leuven))

Adaptive Thresholding for Fair and Robust Biometric Authentication, (Willem Verheyen (DistriNet KU Leuven))

15:00 - 15:30 Coffee break

15:30 - 16:20 (Resource Management and Microservices)

Toward Fine Grain Resource Management for Stream Processing, (Donatien Schmitz (ICTEAM UCLouvain))

Towards the Automatic Adaptation of Stateful Microservices Applications across Edge and Cloud, (Carole Djeumo Noucti (UCLouvain))

Demos/Posters Lightning Talks:

Room: Antistante 2 (Ground floor)

Note: Each presentation is allocated 5 minutes for their talk, plus an additional 2 minutes for questions and answers.

16:20 - 17:00

Demo: ABCperf -- Performance Evaluation of Fault Tolerant State Machine Replication Made Simple, (Tilo Spannagel, Marc Leinweber, Adriano Castro, Hannes Hartenstein (Karlsruhe Institute of Technology (KIT)))

Demo: Fabric-Visualizer: A Transaction Dependency Visualizer for Hyperledger Fabric, (Jeeta Ann Chacko, Nino Richter (Technical University of Munich); Ruben Mayer (University of Bayreuth); Hans-Arno Jacobsen (University of Toronto))

Demo: Thetacrypt -- A Distributed Service for Threshold Cryptography On-Demand, (Orestis Alpos, Mariarosaria Barbaraci, Christian Cachin, Noah Schmid, Michael Senn (University of Bern))

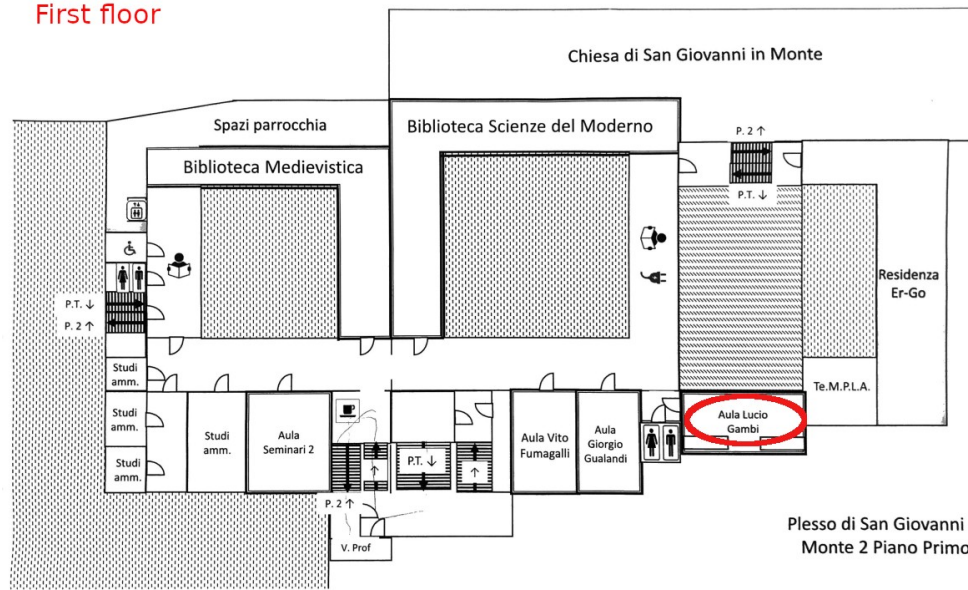
Poster: Towards Building Edge-side Common Data Processing Services on The Computing Continuum, (Yusuke Tanimura, Hidemoto Nakada (AIST); Yunzhi Dong (University of Tsukuba))

Poster: Publish-subscribe with large language models: Improving expressiveness with natural language and generated custom notifications, (Vinod Muthusamy (IBM T.J. Watson Research Center); Vatche Isahagian (IBM Research AI); Aleksander Slominski (IBM Research))

Thursday, December 14th

Gala dinner at Ristorante La Capriata, Strada Maggiore 19 – Corte Isolani 1/e - 40125 Bologna

First floor



Ground floor

