PDP 2026 1st Conference Day
March 25

Time		
08:00 09:00	**Registration**	
09:00 09:30	**Opening ceremony** - Aula Magna -	
09:30 10:30	**Keynote Talk: : From algorithm to code to hardware to execution: why isn't computing performance an experimental science?** *Prof. Gaétan Hains, University Paris-Est Créteil, France (Aula Magna)*	
10:30 11:20	**Coffee Break**	

Time	**Main Track Session 1** *(room Nicolae Iorga)* **Chair: Marco Danelutto**	**Session SPDBNC** *(room Tiberiu Popoviciu)* **Chair: Igor Kotenko**
11:20 11:40	HPC Meets Streaming: Benchmarking OpenMPI, Apache Flink, and Apache Storm, *Eduardo Machado Martins, Breno Spohr Bernardi, Gabriel Rustick Fim, Renato B. Hoffmann, Gabriele Mencagli and Dalvan Griebler*	Digital Twin of an Industrial Control System in the Power Grid: A Platform for Cybersecurity Threat Modeling and Assessment, *Igor Kotenko, Igor Saenko and Evgenii Mityakov*
11:40 12:00	In-Core, Low-Cost Hardware Transactional Memory, *Álvaro Rubira-García, Eduardo José Gómez-Hernández, Rubén Titos-Gil and Alberto Ros*	A Lightweight Hybrid Framework for Semantic Normalization of Security Events, *Artem Mitelshtet and Sergei Savkov*
12:00 12:20	ATTUNE: An Autotuning System for Energy–Performance Optimisation of Parallel Applications on Embedded and Mobile Platforms, *Yazeed Almalaq and Vladimir Janjic*	Application of Genetic Algorithms for Software Decompilation and their Improvement due to Large Language Models, *Konstantin Izrailov and Igor Kotenko*
12:30 14:00	**Lunch Break - Piramida Restaurant**	

Time	**Main Track Session 2** *(room Nicolae Iorga)* **Chair: Dana Petcu**	**Session SPDBNC** *(room Tiberiu Popoviciu)* **Chair: Igor Kotenko**
14:00 14:20	Efficient Binary SpMV on GPUs via Binary Word Compression, *Simone Staccone, Salvatore Filippone and Luca Pepè Sciarria*	A Comparative Analysis of Small-Scale Language Models for Query Filtering in IoT Systems, *Vladimir Lavrentiev and Dmitry Levshun*
14:20 14:40	Research Data Version Management and Machine-Actionable Reproducibility for HPC, *Andreas Knüpfer and Timothy J. Callow*	A Methodology of Creating Digital Twins to Generate Realistic Datasets for Cybersecurity Incident Investigation, *Maxim Gorda, Andrey Chechulin and Igor Kotenko*
14:40 15:00	Reproducible Power Method for Computing Dominant Eigenvalue and Eigenvector, Mykhailo Havdiak, Oliver Lagerqvist, Stef Graillat and Roman Iakymchuk	Integrated Architecture for Testing AI Models in Cybersecurity, *Evgenia Novikova, Mikhail Kuznetsov and Andrey Chechulin*
15:00 15:20	**Coffee Break**	

Time	**Main Track Session 3** *(room Nicolae Iorga)*	**Session HPCMS** *(room Tiberiu Popoviciu)* **Chair: William Spataro**
15:20 15:40	On Imperfect Byzantine Common Coins, *Silvia Bonomi, Giovanni Farina, Roy Friedman, Eviatar Procaccia and Sebastien Tixeuil*	Invited talk: MytilX: A Scalable HPC+AI Framework for Marine Bacterial Contamination Forecasting in Mussel Farming, *Raffaele Montella, University of Naples "Parthenope" (UNP), Italy*
15:40 16:00	On the Performance Evaluation of Dragonfly Connection Rules, *Javier Navaridas and Jose A. Pascual*	Transparent memory layout management for High Performance Computing, *Andrea Giordano, Alessio De Rango, Thomas Garrafa and William Spataro*
16:00 16:20	Multi-path Network Support for Unified Communication X (UCX), *Tooraj Taraz, Elizabeth Reid and Ryan E. Grant*	Accelerating the Particle-In-Cell code ECsim with OpenACC , *Elisabetta Boella, Nitin Shukla, Filippo Spiga, Mozhgan Kabiri Chimeh, Matt Bettencourt and Maria Elena Innocenti*
16:20 16:40	Optimizing the LiGen Drug Discovery Pipeline for Intel Max GPUs, *Saleh Jamali Golzar, Lorenzo Carpentieri, Antonio De Caro, Biagio Cosenza, Davide Gadioli, Gianmarco Accordi, Gianluca Palermo, Federico Ficarelli, Daniele Gregori and Andrea R. Beccari*	Performance and Energy-Aware Modeling of Sparse Matrix Multiplication in Social Graph Analysis, *Elio Masciari and Enea Vincenzo Napolitano*
16:40 17:00	*Privacy-Preserving AIGC Task Offloading in MEC via Generative Adversarial Differential Privacy , Wei Ai, Hongyi Chen, Yun Peng, Tao Meng, Zhixiong He and Keqin Li*	A Visualization Module for Transparent Parallel Execution of Cellular Automata, *Andrea Giordano, Alessio De Rango, Grzegorz Bazior, Davide Macri, Luigi Rizzo, Rocco Rongo, Jarosław Wąs, William Spataro and Giuseppe Mendicino*
17:00 17:20	*TimeGNN-Augmented Hybrid-Action MARL for Fine-Grained Task Partitioning and Energy-Aware Offloading in MEC , Wei Ai, Yun Peng, Tao Meng and Keqin Li*	
18:00	**Welcome Reception – Piramida Restaurant**	

PDP 2026 2nd Conference Day
March 26

08:30 09:00	**Registration**

Keynote Talk: Distribute and Learn 1 Billion
Prof. Radu Prodan, University of Innsbruck, Austria (room Nicolae Iorga)

10:00 10:30	**Coffee Break**

	Main Track Session 4 *(room Nicolae Iorga)* **Chair: Alexandra Jimborean**	**Session HPCMS** *(room Tiberiu Popoviciu)* **Chair: William Spataro**
10:30 10:50	**Evaluating Portable Programming Models for Hypergraph Label Propagation on GPUs,** *Antonio De Caro, Dario De Maio, Francesco Monzillo, Alessia Antelmi and Biagio Cosenza*	**Performance analysis of a parallel implementation of the city hostpot detector algorithm,** *Santina Capalbo, Eugenio Cesario, Paolo Lindia, Federica Lobello and Andrea Vinci*
10:50 11:10	**Fast GPU-driven Kernel Launch with Dynamic Thread Allocation for Irregular Applications,** *Kento Kitamura, Kenji Tanaka and Kazunori Seno*	**A Multithreaded Implementation of the Analog Ensemble Method Assisted by a k-d Tree,** *Allan Rodrigues Clementino, Claudio Schepke, Carlos Balsa and José Carlos Rufino Amaro*
11:10 11:30	**Infinite Data, Zero I/O: A CUDA-Optimized Framework for On-the-Fly Synthetic Data Generation for Deep Learning Pretraining,** *Ferran Soler-Guiral, Manuel F. Dolz and José I. Aliaga*	**Evaluating Deep Models for Motion-Based Authentication in Immersive Environments,** *Luca Ghiani, Enrico Grosso, Andrea Lagorio , Ruiu Pietro and Giuseppe A. Trunfio*
11:30 11:50	**Proxy-Enabled Multi-Transport Connectivity,** *Nicolò Tonci and Massimo Torquati*	**Shard-Local Concurrent Hybrid k-d Tree,** *Kapil Kumar Attinagaramu, Praveen Alapati and Brahmaiah Gandham*

12:00 13:30	**Lunch Break - Piramida Restaurant**

Keynote Talk: Streaming Workflows: From Scientific Applications to AI and Back
Prof. Marco Aldinucci, University of Turin, Italy (room Nicolae Iorga)

	Session DT4DC *(room Nicolae Iorga)* **Chair: Lavinia Chiara Tagliabue**	**Session HPCMS** *(room Tiberiu Popoviciu)* **Chair: Andrea Giordano**	**Session HPC@Edge** *(room D.V. Ionescu)* **Chair: Marco Lapegna**
14:40 15:00	**Real-Time BIM–IoT Synchronization for Operational Digital Twins: The HPC4AI Datacenter Case Study,** *Viviana Vaccaro, Lavinia Chiara Tagliabue and Robert Birke*	**Large-scale, mixed-precision brain simulations on heterogeneous accelerators,** *James Knight, Hengye Zhu and Thomas Nowotny*	**Exploring Distributed Energy Learning: A Federated, Self-Adapting Framework for Sensor-Free Power Estimation at Scale,** *Gennaro Mellone, Antonio Caccioppoli, Alberto Savarese, Fabio Angeletti, Pasquale Corvino and Diana Di Luccio*
15:00 15:20	**Sensor-Driven Digital Twin Architectures for Energy-Efficient Data Centers: The Use Case of EV Charging Infrastructure,** *Chiara Franzoni, Salvatore Dello Iacono and Stefano Rinaldi*	**Exploiting Warp-Level Parallelism for High-Order Finite Element Computations on GPUs,** *Balint Marton Nyakas, Dennis Giannacopoulos and Zeljko Zilic*	**Reinforcement Learning–Based Dynamic Management of Structured Parallel Farm Skeletons on Serverless Platforms,** *Lanpei Li, Massimo Coppola, Malio Li, Valerio Besozzi, Jack Bell and Vincenzo Lomonaco*
15:20 15:40	**Preliminary Life Cycle Assessment of a High-Performance Computing Data Center: A Case Study of the HPC4AI Facility at the University of Turin,** *Lavinia Chiara Tagliabue, Viviana Vaccaro, Alessandro Zichi, Robert Birke and Marco Aldinucci*	**Evaluating Performance in Transformer and Rule-Based Sentiment Analysis Models,** *Maria Chiara Martinis, Chiara Zucco and Mario Cannataro*	**Joint Resource-Aware Scheduling for Peer-to-Peer Stream Processing at the Edge,** *Mastaneh Bahmani and Julien Gascon-Samson*

15:40 16:00	**Coffee Break**

	Session DT4DC *(room Nicolae Iorga)* **Chair: Lavinia Chiara Tagliabue**	**Session HPCMS** *(room Tiberiu Popoviciu)* **Chair: William Spataro**
16:00 16:20	**LEED Certification and Data Centers: A Critical Assessment of Building Sustainability Rating Systems for HPC Facilities,** *Lavinia Chiara Tagliabue, Viviana Vaccaro, Alessandro Zichi and Silvia Meschini*	**Scalability and Energy Profiling of GNNs on Heterogeneous Hardware: Jetson vs x86,** *Luca Barillaro, Chiara Zucco, Marianna Milano, Giuseppe Agapito and Mario Cannataro*
16:20 16:40	**Digital Twin for DCs: a reference architecture based on BIM, IoT and analytics control,** *Silvia Meschini, Paola Gasbarri, Lavinia Chiara Tagliabue, Viviana Vaccaro, Robert Birke and Marco Aldinucci*	**From Molecules to Metrics: Parallel MO-Dijkstra for Multi-Objective Shortest Paths in Biology,** *Giuseppe Agapito, Mario Cannataro and Francesco Rania*
16:40 17:00	**Simulation Model Tracking System: a Digital Twin-based technology to improve the thermal performance of Data Centres,** *Sergio Velásquez Correa, Rossano Scoccia, Marcello Aprile, Pablo Vicente Legazpi and Eduard Loscos Domingo*	**An Efficient and Scalable Federated Graph Neural Network Architecture for Information Operation Detection,** *Gianluigi Folino, Marco Minici, Pietro Sabatino and Michele Scinardo Tenghi*

17:00 19:30	**City Tour (starting point: front of the UBB Main Building)**
19:30	**Conference Dinner** **Restaurant Panoramic Cetățuie**

	PDP 2026 3rd Conference Day **March 27**

08:30 09:00	**Registration**
09:00 10:00	**Keynote Talk:** Edge AI: research, technologies and applications *Prof. Dana Petcu, West University of Timisoara, Romania (room Nicolae Iorga)*
10:00 10:40	**Sponsor talk:** *Marius Țurlea,* Senior Solutions Architect, BRINEL	IQANTO, HPE & NVIDIA: HPE Private Cloud AI *(room Nicolae Iorga)*
10:40 11:00	**Coffee Break**

	Main Track Session 5 *(room Nicolae Iorga)* **Chair: Radu Prodan**	**Session QC** *(room Tiberiu Popoviciu)* **Chair: Tudor Mihoc**
11:00 11:20	Scalable Pipeline Parallel Training of Neural Networks using Reversibility, *Ryota Miyagi, Kensuke Setsu, Kentaro Sano, Hiroshi Nakamura and Hideki Takase*	Distributed Quantum–DNA Hybrid Architectures for Scalable Molecular Computing, *Vasile Vancea*
11:20 11:40	Accelerating Large-Scale Bayesian Network Structure Learning on GPU via Data Access Reduction, *Akira Namekata, Ryota Miyagi, Hirotaka Nishikori, Hiroshi Nakamura and Hideki Takase*	Scalable Quantum Inspired Evolutionary Algorithm for Multi-Objective Optimization Real World Problems, *Olivian-Antonio Gilea, Adrian Florea, Claudia Banciu and Alexandru Telcean*
11:40 12:00	Unlocking Parallel Efficiency in Monte Carlo Particle Transport Applications on Manycore Architectures, *Mina Warnet, Adrien Roussel, Marc Perache and Michael Krajecki*	Exploring Geometric Lattice-Inspired Distribute Quantum Computing: Analogies with Hydrophobic-Polar Models and Qubit Routing, *Ioan Sima*
12:00 12:20	Enabling AI Deep Potentials for Ab Initio-quality Molecular Dynamics Simulations in GROMACS, *Andong Hu, Luca Pennati, Stefano Markidis and Ivy Peng*	Quantum-Assisted Regression for Overall Survival Modeling in Acute Myeloid Leukemia, *Tudor Mihoc and Rodica Ioana Lung*

12:30 14:00	**Lunch Break - Piramida Restaurant**
14:00 14:30	**Awards and conclusions (Aula Magna)**