



CONFERENCE PROGRAMME

Zakopane, 02-04 April 2025

Wednesday, 2 April 2025

15:00 – 17:00	Training LLM for private data, part 1, Krzysztof Nawrocki, PhD (NCBJ), Rafał Możdżonek (NCBJ)	Training Fundamentals of research data management, Roksana Wilk (ACC Cyfronet AGH)
17:00 – 17:20	Coffee break	
17:20 – 19:20	Training LLM for private data, part 1, Krzysztof Nawrocki, PhD (NCBJ), Rafał Możdżonek (NCBJ)	
19:30 – 20:30	Dinner	

Thursday, 3 April 2025

9:00 – 10:40	Session 1 Chair: Andrzej Zemła, PhD (ACC Cyfronet AGH)
9:00	Cyfronet in the AI Era , <u>Marek Magryś</u> (ACC Cyfronet AGH)
9:40	Relativistic MHD Simulations of Merging and Collapsing Stars , <u>prof. Agnieszka Janiuk</u> (Center for Theoretical Physics PAS)
10:10	Introduction to Quantum Computing – Optimizing Logistics case study , <u>Paweł Gora, PhD</u> (Quantum AI Foundation)
10:40 – 11:20	Coffee & Poster Session
	Automated Management of 3D Digital Cultural Heritage Objects in Eureka3D with Onedata – M. Orzechowski, Ł. Opiola, I. L. Martínez, M. Ioannides, P. N. Panayiotou, Ł. Dutka, R. G. Słota, <u>Jacek Kitowski</u> QHyper: an Integration Library for Hybrid Quantum-Classical Optimization – T. Lamża, <u>Justyna Zawalska</u>, K. Jurek, M. Sterzel, K. Rycerz Modeling of the Molecular Structure and the Modulated Nematic Phase – <u>Bartosz Nikiel</u>, A. Kocot HPC-Driven Analysis of LGAD Waveforms for Proton Beam Monitoring – <u>Leszek Grzanka</u>, N. Minafra, R. McNulty, M. Nessel, T. Nowak, J. Swakoń, P. Rzeźnik Three-Step Deep Learning System for Cancer Cell Detection – J. Krupiński, <u>Ernest Jamro</u>, M. Wielgosz, P. Russek, A. Dąbrowska-Boruch, K. Wiatr SPEECHM: Extendable AI Models Benchmarking Service – <u>Marek Kasztelnik</u>, S. Mazurek Toolkit for Managing Research Data in Medical Simulations on HPC Infrastructure – <u>Taras Zhyhulin</u>, K. Zajac, P. Nowakowski, M. Malawski, J. Meizner, M. Kasztelnik, P. Połec Serverless Transcriptomics on the HPC Cluster – <u>Kamil Burkiewicz</u>, M. Malawski Analysis of Index Access Pattern in STAR RNA-seq Aligner – <u>Jan Meizner</u>, P. Kica, S. Lichołaj, M. Malawski Using High Performance Computing for the Quantification and Personalization of Cardiovascular Models – <u>Karolina Tlałka</u>, H. Saxton, I. Halliday, A. Narracott, M. Malawski Bipolar Disorder Characterization from Diffusion MRI: a Deep Learning Approach – <u>Dominika Ciupek</u>, M. Malawski, T. Pięciak Verification, Validation and Uncertainty Quantification Workflows on High Performance Computers – <u>Karol Zajac</u> EDITH Project Roadmap – towards Virtual Human Twins – <u>Marian Bubak</u>, M. Kasztelnik, M. Malawski, J. Meizner, P. Nowakowski, P. Połec Enabling Scientists Through Marketplace: Simplifying Access to HPC and Research Resources – <u>Michał Kołomański</u>, W. Ziajka, P. Gorczyca UX Research for HPC Platforms – How to Increase the Adoption of e-Infra Services? – <u>Katarzyna Lechowska-Winiarz</u>, A. Pułapa, A. Świerad

11:20 – 13:20		Session 2 Chair: prof. Paweł Russek (AGH / ACC Cyfronet AGH)	Training
	11:20	Qommunity: a Library for Community Detection Using Quantum and Classical Methods , <i>Kacper Jurek, B. Wojtarowicz, K. Rycerz, J. Falcó-Roget</i>	LLM for private data, part 2 , Krzysztof Nawrocki, PhD (NCBJ), Rafał Możdżonek (NCBJ)
	11:35	Designing Graph-Kolmogorov-Arnold Networks for Node Classification with Cartesian Genetic Programming , <i>Maciej Krzywdą, C. Hua, S. Łukasik, A. H. Gandomi</i>	
	11:50	High-Performance Computing for Event Cameras: DIF Filtering and Graph Convolutional Networks for Object Classification , <i>Marcin Kowalczyk, K. Jeziorek, T. Kryjak, M. Gorgoń</i>	
	12:05	Evaluating Synthetic vs. Real Dynamic Vision Sensor Data for SNN-Based Object Detection Classification , <i>Mustafa Sakhaj, K. Sithu, M. K. S. Oke, S. Mazurek, M. Wielgosz</i>	
	12:20	AMD ROCm™ Software – Open software stack that includes programming models, tools, compilers, libraries, and runtimes for AI and HPC solution development on AMD GPUs , <i>Igor Pasichnyk (AMD)</i>	
	12:40	Sieci Ethernet w środowisku AI/HPC , <i>Piotr Kędra (Arista Networks)</i>	
	13:00	Fabryka AI i HPC od Della – made in Poland , <i>Bartosz Charliński (Dell Technologies)</i>	
13:20 – 14:20		Lunch	
14:20 – 16:20		Session 3 Chair: prof. Jacek Kitowski (AGH / ACC Cyfronet AGH)	Training
	14:20	Calculation of Graph Isomorphisms in the Context of Processing of Big Structured Data , <i>Igor Wojnicki, A. Suchorab, A. Bielecki, M. Bielecka</i>	Access to supercomputers at ACC Cyfronet AGH , Klemens Noga (ACC Cyfronet AGH), Oskar Klimas (ACC Cyfronet AGH)
	14:35	Modeling Texture Evolution in Metals with CA Model , <i>Bartosz Sułkowski</i>	
	14:50	Fast Simulation of the FoCal-H Detector with Machine Learning , <i>Ł. Dubiel, P. Ludynia, Emilia Majerz</i>	
	15:05	Self-Gravity, Perturbations, and Magnetic Fields in Gamma-Ray Burst Progenitors , <i>Piotr Płonka, A. Janiuk</i>	
	15:20	HPE - Accelerate Innovation and Discovery , <i>Marc Simon (HPE)</i>	
	15:40	Intel Xeon 6 & Gaudi: Nowa Era Wydajności dla HPC , <i>Artur Flinta (Intel Technology Poland)</i>	
	16:00	Convergence of HPC and AI... How? , <i>Rick Koopman (Lenovo)</i>	
16:20 – 16:40		Coffee break	
16:40 – 17:40		Session 4 Chair: prof. Jacek Niemiec (INP PAS)	Training
	16:40	Mildly Relativistic Shocks at High Magnetisation Using PIC Simulations , <i>Gabriel Torralba Paz, M. Hoshino, T. Amano, S. Matsukiyo, J. Niemiec</i>	A practical introduction to the effective use of compute cluster storage space and dataset management , Maciej Pawlik (ACC Cyfronet AGH)
	16:55	Modelling High Energy Fermi Gamma-Ray Bursts Using GRMHD Simulations , <i>Joseph Saji, S. Bhardwaj, M. G. Dainotti, A. Janiuk</i>	
	17:10	PIC Simulations of Particle Acceleration at Astrophysical Shocks: Study of the Parameter Reduction Effects , <i>O. Kobzar, Gabriel Krężel</i>	
	17:25	High-Resolution Atmospheric Simulations in Areas with Complicated Topography, Based on the Example of the Tatra Mountains , <i>Adrian Góra, M. Gałkowski, M. Zimnoch</i>	
19:00 – 22:00		Conference Dinner	

Friday, 4 April 2025			
9:00 – 10:35		Session 5 Chair: Szymon Mazurek (ACC Cyfronet AGH)	
	9:00	Bielik: the Road to the Polish Large Language Model (LLM) , <u>Remigiusz Kinas</u> (<i>Speakleash/Bielik.ai</i>)	
	9:35	PLGrid Forge , <u>Szymon Mazurek</u> , <u>Łukasz Flis</u> (ACC Cyfronet AGH)	
	10:00	Fortissimo Plus , <u>Patrycja Dąbrowska-Wierzbicka</u> (ACC Cyfronet AGH)	
	10:15	Cyberbezpieczeństwo i sztuczna inteligencja , <u>Krzysztof Małek</u> (COIG S.A.), <u>Łukasz Hoppe</u> (COIG S.A.), <u>Łukasz Mietła</u> (COIG S.A.), <u>Łukasz Sikorski</u> (COIG S.A.)	
	10:25	Cloud native research , <u>Jakub Zboina</u> (Comtegra S.A.)	
10:35 – 10:55		Coffee break	
10:55 – 12:55		Session 6 Chair: Marian Bubak, PhD (ACC Cyfronet AGH / Sano)	Training
	10:55	Deep Learning for Cancer Cell Detection in Veterinary Cytology , <u>Jan Krupiński</u> , <u>E. Jamro</u> , <u>M. Wielgosz</u> , <u>P. Russek</u> , <u>A. Dąbrowska-Boruch</u> , <u>K. Wiatr</u>	Best practices on jobs monitoring and scalability tests, <u>Oskar Klimas</u> (ACC Cyfronet AGH)
	11:10	Treatment Prediction of Head and Neck Cancer with Vision-Language Modeling , <u>Filip Ręka</u> , <u>B. Minch</u>	
	11:25	GaNDLF-Synth: a Framework for Generative AI in Biomedical Imaging , <u>S. Pati</u> , <u>Szymon Mazurek</u> , <u>A. Lindaros</u> , <u>S. Bakas</u>	
	11:40	Comparative Computational Study of Isomeric TFSI and FPFSI Anions in Li-Ion Electrolytes , <u>Andrzej Eilmes</u> , <u>P. Kubisiak</u> , <u>D. Narkevičius</u> , <u>C. Nicotri</u>	
	11:55	Enhancing Ni/x/Au/1-x/ Thermoelectric Performance through Resonant Scattering , <u>Kacper Pryga</u> , <u>B. Wiendlocha</u>	
	12:10	Highly Accurate ab initio Calculations of the Excited Electronic States of the Helium Molecule , <u>Dawid Dąbrowski</u> , <u>M. Gronowski</u> , <u>M. Przybytek</u> , <u>M. Tomza</u>	
	12:25	Application of Differential Molecular Electrostatic Potential (ΔMEP) in a Description of Chemical Bonding and Reactivity , <u>Olga Żurowska</u> , <u>A. Michalak</u>	
	12:40	Theoretical Study on Photophysical Properties of a Coumarin Derivative , <u>Dominika Tabor</u> , <u>M. Srebro-Hooper</u>	
12:55 – 13:55		Lunch	
13:55 – 15:10		Session 7 Chair: prof. Andrzej Eilmes (Jagiellonian University)	Training
	13:55	Quantum-Chemical Modelling of Photophysical and Chiroptical Properties of a Helical Molecular System with a Potential Application in CP-OLEDs , <u>Dominika Jelonek</u> , <u>M. Srebro-Hooper</u>	Best practices on jobs monitoring and scalability tests, <u>Oskar Klimas</u> (ACC Cyfronet AGH)
	14:10	Study of Lattice Dynamics and Electron-Phonon Interaction in SnTe:In and PbTe:TI , <u>Gabriel Kuderowicz</u> , <u>B. Wiendlocha</u>	
	14:25	Experimental and Theoretical Studies of the Structure of Selected Styrene-Divinylbenzene Ion Exchange Resins , <u>Katarzyna Chruszcz-Lipska</u>	
	14:40	Cellular Automaton Approach to Estimation of Neurotransmitter Flow Parameters in a Presynaptic Bouton of a Neuron , <u>A. Bielecki</u> , <u>Maciej Gierdziewicz</u>	
	14:55	Design of Alkylxanthine Derivatives of 3,4-dihydroquinazoline-2-amine as Potential Serotonin Receptor Ligands Using Molecular Modelling Methods , <u>Natalia Kozień</u> , <u>P. Zaręba</u>	
15:10 – 15:20		Conference closing	