MathAI 2025 (Room 1 - Turin)

International Conference dedicated to Mathematics in Artificial Intelligence

Sirius International Mathematical Center

Sochi, 24-28 March 2025

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Day of arrival, accommodation of participants	**9:00am-9:10 am** Chairman of the Program Committee MathAI2025 Professor Ivan Oseledets - About the prospects and possibilities of the conference MathAI2025. **9:10am-9:20 am** academician RAS Sergey Goncharov - Welcome speech **9:20am-9:30 am** Director of the Computing Power Application Innovation Institute Joshua Huang (Shenzen, China) (online) - Welcome speech **9:30am-9:40 am** academician RAS Alexei Semenov - Welcome speech **9:40am-9:50 am** academician RAS Arutyun Avetisyan - Welcome speech **9:50am-10:00 am** Chief organizer MathAI2025 Dr. Andrey Nechesov: Conference plans, information on reports and events. **10:00am-10:30am** CEO AIRI Ivan Oseledets: Is math necessary in AI? **10:30am-11:00am** academician RAS Sergey Goncharov & Dr. Andrey Nechesov: Task Approach and Trustworthy AI: new prospects. **11:00am-11:30am** Coffee break **11:30am-12:00pm** Director of Big Data Innovation Center, Shenzhen, China professor Bingyi Jing (online): Dynamic Data Selection in Large Model Training **12:00pm-12:30pm** Vladimir Lyashev (LRI, Moscow) AI Computing Efficiency Demand, Ways and Challenges **12:30pm-14:00pm** Dinner-Cafeteria	**9:00am-9:30am** Director of Ugra Research Institute Andrey Melnikov: Application of deep machine learning models for processing satellite imagery to solve practical environmental protection tasks in northern territories **9:30am-10:00am** professor SZU, China Tsz Nam Chan (online): SLAM: Efficient Sweep Line Algorithms for Kernel Density Visualization **10:00am-10:30am** professor SUAT, China Qiaoqiao Zhou (online): Generalized Group Testing **10:30am-10:50am** Ivan Bondarenko: Uncertainty and Hallucinations in Large Language Models: An Empirical Study **10:50am-11:20am** Nikolay Mikhaylovskiy: States of LLM-generated Texts and Phase Transitions between them **11:10am-11:30am** Coffee break **11:30am-11:50am** Dmitry Yarotsky (online): Corner SGD **11:50pm-12:10pm** Ivan Dorokhov: Time-Exact Multi-Blockchain Architectures for Trustworthy Multi-Agent Systems **12:10pm-12:30pm** Vladimir Latypov: Exploring convolutional KAN architectures with NAS **12:30pm-14:00pm** Dinner-Cafeteria **14:00pm-14:20pm** Evgeniy Garin: Necessary and Sufficient Conditions of an Inventing Machine **14:20pm-14:40pm** Alexei Belov: Computer science, big data and possible revolution in social science	**9:00am-12:30pm** Round table on AI issues: 1) Strong AI Russian Strategy on 2026-2030 2) Semantic approaches for Trustworthy AI 3) Applied AI Based on Modern Mathematical Solutions and Current problems 4) Educational Issues in the Age of AI Technologies 5) International cooperation in the field of AI	**9:00am-9:20am** Evgeniy Garin: Mathematical modeling of the plot: calculation of the maximum number of unique plots **9:20am-9:40am** Andrew Perminov: A Consistent Method for Generating Synthetic Tabular Data with a Fully Connected Neural Network **9:40am-10:00am** Janne Ruponen: AI-Driven Digital Twins: A Blockchain-Backed Framework for Real-Time Urban Simulation **10:00am-10:20am** Sergei Strijhak: Probabilistic sparse variational model based on Gaussian processes for energy parameter forecasting **10:20am-10:40am** Konstantin Chizhov: Random forest regression and Shapley additive explanation for effective dose rate estimation in high-energy neutron fields based on Bonner spectrometer measurements **10:40am-11:00am** Olga Ataeva: Using knowledge graph in adapting language model on mathematical text **11:00am-11:30am** Coffee break **11:30pm-11:50pm** Dmitry Stenkin: Physics-informed radial basis function networks and Kolmogorov-Arnold networks **11:50am-12:10pm** Anton Legchenko: Adopting Domain-Specific Knowledge in ASR Systems **12:10am-14:00pm** Dinner-Cafeteria	**9:00am-9:20am** Illarion L. Iov: Deep GNN-driven Surrogate for the Better Meta-learning in AutoML **9:20am-9:40am** Vadim Eliseev: Method of Building RAG-Powered Instruction Dataset from Raw Corporate Text Data for LLM Fine-Tuning **9:40am-10:00am** Alexander Lobanov: Linear Convergence Rate in Convex Setup is Possible! First- and Zero-Order Algorithms under Generalized Smoothness **9:40am-10:00am** Georgy Tolokonnikov: Categorical model of neural networks **10:20am-10:40am** Vladislav Litvinov: On one solution of the problem of stochastic longitudinal oscillations of a viscoelastic rope with moving boundaries using AI **10:40am-11:00am** Sergey Yakunin: Building Algorithmic Trading Strategies Using LSTM Neural Networks with Attention Mechanisms **11:00am-11:20am** Coffee break **11:20am-11:40am** Kasimkhan Hubiev: Deep Learning Models Meet Financial Data Modalities **11:40am-12:00pm** Elizaveta Martinovich: Optimizing Stock Investment Portfolios Using Dynamic Graph Neural Networks **12:00am-14:00pm** Dinner-Cafeteria	**13:00pm-17:00pm** Day of departure of participants

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