Symbolic Computation and Machine Learning, SCML 2026
Conference Program
Monday, July 6

08:00-08:20	Registration	
08:20-08:30	Opening	
08:30-09:20, Invited Talk. Room: Gemeindesaal. Chair: Bruno Buchberger		
08:30-09:20	Martin Charles Golumbic. 36 Years of AI and Math	
09:20-10:10 Session: Combination of Symbolic Reasoners and Large Language Models Room: Gemeindesaal. Chair: Bruno Buchberger		
09:20-09:45	Hao Shen, Junyu Guo, Junqi Liu, Lihong Zhi. Certified CAS-assisted Polynomial Reasoning in Lean 4	
09:45-10:10	Wolfgang Schreiner. On the Rapid Prototyping of a Logical Agent	
10:10-10:40	Coffee break	
10:40-12:20 Session: From LLM-Assisted Reasoning to Verified Systems Room: Gemeindesaal. Chair: Temur Kutsia		
10:40-11:05	Koji Nakagawa, Bruno Buchberger. Proof Engineering: Nakano's Light Puzzle Example.	
11:05-11:30	Michael Shalyt, Elyasheev Leibtag, Shachar Weinbaum, Ido Kaminer. Unifying Structure for Ramanujan's 17 Series for $1/\pi$: A Human-AI Discovery	
11:30-11:55	Gábor Kusper. Verified Vibe Coding	
11:55-12:20	Steffen Fricke, Jürgen Jasperneite. Approach for the Network Configuration of Wireless Systems using RAG: Fine-Tuning and Formal Verification Component	
12:20-14:00	Lunch break	
14:00-14:50, Invited Talk Room: Gemeindesaal. Chair: Wolfgang Windsteiger		
14:00-14:50	Michael Kohlhase. Machine Learning in Symbolic Computation — A Skeptical Perspective	
14:50-15:40 Session: Symbolic Computation and Machine Learning in Education and Beyond Room: Gemeindesaal. Chair: Wolfgang Windsteiger		
14:50-15:15	Zoltán Kovács, Tomás Recio, Piedad Tolmos, Pilar M. Vélez. Comparing Human Perception, Computer-algebra, and Generative AI Approaches for Ranking Elementary Geometry Statements	
15:15-15:40	Erhard Glötzl. The Extended Scientific Method — From DNA to SC and ML.	
15:40-16:10	Coffee break	
16:10-17:00, Invited Talk Room: Gemeindesaal. Chair: David Cerna		
16:10-17:00	Cezary Kaliszyk. Formalization and Automated Reasoning in the Age of LLMs	
	17:00-18:15 Session: Heuristic Support in Symbolic Algorithms Room: Gemeindesaal. Chair: David Cerna	**17:00-18:15 Session: LLMs, Symbolic Algorithms, and Industrial Practice Room: Rittersaal. Chair: Gabor Kusper**
17:00-17:25	Rohit John, Rashid Barket, Matthew England. Replacing Heuristic Rule Ordering in Symbolic Integration with Learned Policies	Ali Soltani, Gabriel Kronberger, Fabricio Olivetti de França, Alessandro Lucantonio. Learning to Rank Symbolic Expressions for Model Selection
17:25-17:50	Gregoire Sergeant-Perthuis, Jules Tsukahara, Elias Tsigaridas. Exact Algebraic Computation of Learning Coefficients for Two-Dimensional Singular Models	Thomas Mahringer. When the Vibes Fade: An Industry Perspective on LLM Coding Limits — A Discussion Case for Symbolic Computation
17:50-18:15	Alexei Lisitsa. Towards Quantum-Reservoir Trajectory Signatures for Symbolic Rewriting Dynamics.	Tereso del Rió. Improving Optimization Formulations in Industrial Settings with LLMs
18:30--	Softwarepark Hagenberg tour	

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Conference Program

Tuesday, July 7

08:00-08:30	Registration	
08:30-09:20, Invited Talk Room: Gemeindesaal. Chair: Carsten Schneider		
08:30-09:20	Ido Kaminer. From π to QFT: Symbolic Discovery at Scale	
09:20-10:10 Session: Machine Learning for Integro-Differential Equations and Dynamical Systems Room: Gemeindesaal. Chair: Michael Shalyt		
09:20-09:45	François Lemaire, Louis Roussel. Deep Learning for Integro-Differential Modeling	
09:45-10:10	Meskerem Abebaw Mebratie, Rüdiger Nather, Guido Falk von Rudorff, Werner M. Seiler. Discovering Symbolic Representation of Conservation Laws of Dynamical Systems Using Machine Learning	
10:10-10:40	Coffee break	
10:40-11:30, Invited Talk Room: Gemeindesaal. Chair: Wolfgang Schreiner		
10:40-11:30	Martina Seidl. Reason with SAT for Rule Learning	
11:30-12:45 Session: AI-Driven Theory Exploration and Reasoning Room: Gemeindesaal. Chair: Wolfgang Schreiner		
11:30-11:55	Uri Kasher Hitin, Michael Shalyt, Shachar Weinbaum, Hila Barkan, Tali Monderer, Elyasheev Leibtag, Rotem Kalisch, Ido Kaminer. A Computational Framework for Automated Discovery within Conservative Matrix Fields	
11:55-12:20	David Cerna Towards Inductive Logic Programming at Scale	
12:20-12:45	Verena Praher, Endre Szasz-Revai, Wolfgang Windsteiger. Reasoning over Legal Texts Using Large Language Models and Automated Reasoning.	
12:45-14:00	Lunch break	
14:00-14:50, Invited Talk Room: Gemeindesaal. Chair: Temur Kutsia		
14:00-14:50	Josef Urban. Alien Codes and Their Automated and Human Explanations	
	14:50-15:40 Session: Learning for Computational Structures Room: Gemeindesaal. Chair: Alexei Lisitsa	
14:50-15:15	Constant Le Bezvoët, François Fages, Julien Martinelli. Reactmine-2: a Statistical Beam Search Algorithm for Learning Biochemical Reaction Models from Time Series Data	
15:15-15:40	Yuxuan Song, Changbo Chen. Learning to Compute Polynomial Products with Transformers	
15:40-16:10	Coffee break	
16:10-17:00, Invited Talk Room: Gemeindesaal. Chair: Bruno Buchberger		
16:10-17:00	Hiroshi Kera. Computational Algebra with Transformers: What Deep Learning Adds to Computational Algebra	
	17:00-18:15 Session: Datasets for Machine Learning in Symbolic Computation Room: Gemeindesaal. Chair: Wolfgang Schreiner	**17:00-18:15 Session: Algebraic Structures and Machine Learning Room: Rittersaal. Chair: Wolfgang Windsteiger**
17:00-17:25	Yuki Ishihara, Kazuhiro Yokoyama. Efficient Dataset Generation for Bases of Zero-Dimensional Ideals	Lixin Du. Interactive AI for Computer Algebra: A Documentation-Grounded Assistant for ore_algebra
17:25-17:50	Rui-Juan Jing, Yuegang Zhao, Changbo Chen. Breaking the Data Barrier in Learning Symbolic Computation: A Case Study on Variable Ordering Suggestion for Cylindrical Algebraic Decomposition.	Rüdiger Nather. Representing Polynomial Ideals as Heterogeneous Graphs for Inductive Machine Learning
17:50-18:15		Mohit Kumar, Bernhard A. Moser, Manuela Geiß. Operator-Theoretic and Complexity-Based Synthesis of a Gradient-Free Federated Kernel Learner

18:30--	**Special Session: EU Initiative RAISE Room: Rittersaal. Chair: Matthew England**

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Conference Program

Wednesday, July 8

Joint SCML / SCDDE sessions

08:00-08:30	Registration
08:30-10:10, Invited Talks Room: Gemeindesaal. Chair: Georg Regensburger	
08:30-09:20	Bruno Buchberger Vibe Coding, Vibe Proving, Vibe Mathematics …?
09:20-10:10	Markus Lange-Hegemann. Differential Algebraic Machine Learning in Linear PDE Solution Spaces
10:10-10:40	Coffee break
10:40-12:25 Industry Session: Partner Presentations Room: Gemeindesaal. Chair: Bruno Buchberger	
10:40-10:55	NXAI
10:55-11:10	Uni Software Plus
11:10-11:25	Softwarepark Hagenberg
11:25-11:40	RISC Software GmbH
11:40-11:55	Software Competence Center Hagenberg
11:55-12:10	Dynatrace
12:10-12:25	Bluesource
12:25-14:00	Lunch break
14:00-15:40, Invited Talk Room: Gemeindesaal. Chair: Carsten Schneider	
14:00-14:50	Peter Paule The unreasonable effectiveness of computer algebra in the mathematical sciences
14:50-15:40 Session: Symbolic Integration, Machine Learning, and Large Language Models Room: Gemeindesaal. Chair: Carsten Schneider	
14:50-15:15	Matthew England Machine Learning Symbolic Integration Algorithm Selection
15:15-15:40	Stav Belyy, Shalev Zuriel, Tomer Raz, Michael Shalyt, Ido Kaminer. Generate, Verify, Refine: A Closed-Loop LLM-CAS Approach to Symbolic Integration.
15:40-17:00	Larger break, coffee, taking group photo
17:00-17:50, Invited Talk Room: Gemeindesaal. Chair: Bruno Buchberger	
17:00-17:50	Stephen Wolfram. Getting Math from the Computational Universe

19:00 --	Conference dinner