Symbolic Computation and Machine Learning, SCML 2026

July 6-8, 2026, Castle of Hagenberg

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

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	Yuta Kambe. Zariski-Dense Dataset Generation for Learning to Compute Gröbner Bases	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: Gemeindesaal** **Chair: Matthew England**

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: Louis Roussel**
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