



# 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
<b>08:30-09:20, Invited Talk</b> Room: Gemeindesaal Chair: Bruno Buchberger	
08:30-09:20	Martin Charles Golumbic. 36 Years of AI and Math
<b>09:20-10:10</b> <b>Session: Combination of Symbolic Reasoners and Large Language Models</b> 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
<b>10:40-12:20</b> <b>Session: From LLM-Assisted Reasoning to Verified Systems</b> 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, Elyashev Leibtag, Shachar Weinbaum, Ido Kaminer. Unifying Structure for Ramanujan's 17 Series for $1/x$ : 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
<b>14:00-14:50, Invited Talk</b> Room: Gemeindesaal Chair: Wolfgang Windsteiger	
14:00-14:50	Michael Kohlhase. Machine Learning in Symbolic Computation — A Skeptical Perspective
<b>14:50-15:40</b> <b>Session: Symbolic Computation and Machine Learning in Education and Beyond</b> 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
<b>16:10-17:00, Invited Talk</b> Room: Gemeindesaal Chair: David Cerna	
16:10-17:00	Cezary Kaliszyk. Formalization and Automated Reasoning in the Age of LLMs
<b>17:00-18:15</b> <b>Session: Heuristic Support in Symbolic Algorithms</b> Room: Gemeindesaal Chair: David Cerna	
17:00-17:25	Rohit John, Rashid Barket, Matthew England. Replacing Heuristic Rule Ordering in Symbolic Integration with Learned Policies
17:25-17:50	Gregoire Sergeant-Perthuis, Jules Tsukahara, Elias Tsigaridas. Exact Algebraic Computation of Learning Coefficients for Two-Dimensional Singular Models
17:50-18:15	Alexei Lisitsa. Towards Quantum-Reservoir Trajectory Signatures for Symbolic Rewriting Dynamics
<b>17:00-18:15</b> <b>Session: LLMs, Symbolic Algorithms, and Industrial Practice</b> Room: Rittersaal Chair: Gabor Kusper	
17:00-17:25	Ali Soltani, Gabriel Kronberger, Fabrizio Olivetti de França, Alessandro Lucantonio. Learning to Rank Symbolic Expressions for Model Selection
17:25-17:50	Thomas Mahringer. When the Vibes Fade: An Industry Perspective on LLM Coding Limits — A Discussion Case for Symbolic Computation
17:50-18:15	Tereso del Río. Improving Optimization Formulations in Industrial Settings with LLMs
18:30--	Softwarepark Hagenberg tour

Tuesday, July 7	
08:00-08:30	Registration
<b>08:30-09:20, Invited Talk</b> Room: Gemeindesaal Chair: Carsten Schneider	
08:30-09:20	Ido Kaminer. From $\pi$ to QFT: Symbolic Discovery at Scale
<b>09:20-10:10</b> <b>Session: Machine Learning for Integro-Differential Equations and Dynamical Systems</b> Room: Gemeindesaal Chair: Michael Shalyt	
09:20-09:45	François Lemaire, Louis Rousselet. 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
<b>10:40-11:30, Invited Talk</b> Room: Gemeindesaal Chair: Wolfgang Schreiner	
10:40-11:30	Martina Seidl. Reason with SAT for Rule Learning
<b>11:30-12:45</b> <b>Session: AI-Driven Theory Exploration and Reasoning</b> Room: Gemeindesaal Chair: Wolfgang Schreiner	
11:30-11:55	Uri Kasher Hitin, Michael Shalyt, Shachar Weinbaum, Hila Barkan, Tali Monderer, Elyashev 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
<b>14:00-14:50, Invited Talk</b> Room: Gemeindesaal Chair: Temur Kutsia	
14:00-14:50	Josef Urban. Alien Codes and Their Automated and Human Explanations
<b>14:50-15:40</b> <b>Session: Learning for Computational Structures</b> Room: Gemeindesaal Chair: Alexei Lisitsa	
14:50-15:15	Constant Le Bezoët, 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
<b>16:10-17:00, Invited Talk</b> Room: Gemeindesaal Chair: Bruno Buchberger	
16:10-17:00	Hiroshi Kera. Computational Algebra with Transformers: What Deep Learning Adds to Computational Algebra
<b>17:00-18:15</b> <b>Session: Datasets for Machine Learning in Symbolic Computation</b> Room: Gemeindesaal Chair: Wolfgang Schreiner	
17:00-17:25	Yuki Ishihara, Kazuhiro Yokoyama. Efficient Dataset Generation for Bases of Zero-Dimensional Ideals
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
17:50-18:15	Mohit Kumar, Bernhard A. Moser, Manuela Geiß. Operator-Theoretic and Complexity-Based Synthesis of a Gradient-Free Federated Kernel Learner
<b>17:00-18:15</b> <b>Session: Algebraic Structures and Machine Learning</b> Room: Rittersaal Chair: Wolfgang Windsteiger	
17:00-17:25	Lixin Du. Interactive AI for Computer Algebra: A Documentation-Grounded Assistant for <code>ore_algebra</code>
17:25-17:50	Rüdiger Nather. Representing Polynomial Ideals as Heterogeneous Graphs for Inductive Machine Learning
18:30--	Special Session: EU Initiative RAISE Room: Rittersaal Chair: Matthew England

Wednesday, July 8	
Joint SCML / SCDE sessions	
08:00-08:30	Registration
<b>08:30-10:10, Invited Talks</b> 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
<b>10:40-12:25 Industry Session: Partner Presentations</b> 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
<b>14:00-15:40, Invited Talk</b> Room: Gemeindesaal Chair: Carsten Schneider	
14:00-14:50	Peter Paule The unreasonable effectiveness of computer algebra in the mathematical sciences
<b>14:50-15:40</b> <b>Session: Symbolic Integration, Machine Learning, and Large Language Models</b> Room: Gemeindesaal Chair: Carsten Schneider	
14:50-15:15	Matthew England Machine Learning Symbolic Integration Algorithm Selection
15:15-15:40	Stav Belyi, 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
<b>17:00-17:50, Invited Talk</b> Room: Gemeindesaal Chair: Bruno Buchberger	
17:00-17:50	Stephen Wolfram. Getting Math from the Computational Universe
19:00 --	Conference dinner