Wednesday 10/09

08:30 — **Opening - François Fages & Sabine Pérès**

Machine learning session 1 — *Chair François Fages*

09:00–09:30 — **Invited talk: Causal discovery and network inference for biological and biomedical data**
Hervé Isambert
Abstract

10:00 — **Kolmogorov-Arnold Network for Gene Regulatory Network Inference**
Tsz Pan Tong, Aoran Wang, George Panagopoulos and Jun Pang

10:30 — **Coffee Break**

Boolean network session 1 — *Chair Loïc Paulevé*

11:00 — **Three-State Gene Expression Model Parameterized for Single-Cell Multi-Omics Data**
Thibaut Peyric, Thomas Lepoutre, Anton Crombach and Thomas Guyet

11:30 — **Computation of immediate neighbours of monotone Boolean functions**
José E.R. Cury, Patrícia Roxo, Vasco Manquinho, Claudine Chaouiya and Pedro T. Monteiro

12:00 — **On Model Reductions of Boolean Networks**
Claudine Chaouiya, Jérôme Feret and Patrícia T. Roxo

12:30 — **AEON 2025: Robust Control of Partially-Specified Boolean Networks (tool paper)**
Vojtěch Veselý, Eva Šmijáková, Samuel Pastva, Nikola Beneš and David Šafránek

13:00–14:00 — **Lunch**

Population model and control session — *Chair Marco Antoniotti*

14:30 — **Eukaryotic ancestry in a finite world**
Juliette Luiselli and Manuel Lafond

15:00 — **Minimal metabolic exchanges for microbial communities in a chemostat at steady state**
Alix Moawad and Jörg Stelling

15:30 — **Seed inference in interacting microbial communities using combinatorial optimization**
Chabname Ghassemi Nedjad, Clémence Frioux, Loïc Paulevé and Sebastian Nelson Mendoza

16:00 — **A model-free control strategy for selective disruption of parkinsonian brain oscillations**
Cédric Join, Jakub Orlowski, Antoine Chaillet, Madeleine Lowery, Hugues Mounier and Michel Fliess

16:30–18:30 — **Poster aperitif: 25 posters exposed for discussion in lunch room**

Thursday 11/09

Machine learning session 2 — *Chair Jun Pang*

09:00–09:30 — **Invited talk: Kernel-based perturbation testing for single-cell data**
Franck Picard
Abstract

10:00 — **Optimal input design for model selection in systems with cell-to-cell variability**
Andrea Stallvik, Hans-Michael Kaltenbach and Jörg Stelling

10:30 — **Coffee Break**

Machine learning session 3 — *Chair Ion Petre*

11:00 — **Decoding Gene Regulation in Alzheimer's disease with Transfer Learning and Explainable Machine Learning**
Sergio Peignier, Amanda Lo Van, Yann Meunier, Elea Pauliat, Matis Zouari and Federica Calevro

11:30 — **Interaction Graphs of Phytoplankton Species Interactions using Logical Learning**
Madeleine Eyraud, Maxime Folschette, Katsumi Inoue, Sébastien Lefebvre and Cédric Lhoussaine

12:00 — **Evaluating PDE discovery methods for multiscale modeling of biological signals**
Andréa Ducos, Audrey Denizot, Thomas Guyet and Hugues Berry

12:30 — **Optimizing Feature Extraction Methods using Class Similarity Ratio for EMG-based Hand Gesture Classification**
Felicity Escarzaga, Brian Donnelly and Kyle Winfree

13:30–14:00 — **Lunch and posters**

Boolean network session 2 — *Chair Elisabeth Pecou, Pedro Monteiro*

14:30–15:00 — **Invited talk: Reverse Engineering and Optimization of Metabolic Networks**
Susana Vinga
Abstract

15:30 — **Continuous Petri Nets Faithfully Fluidify Most Permissive Boolean Networks**
Stefan Haar and Juri Kolčák

16:00 — **Looking for Signs: Reasoning About FOBNNs Using SAT**
Hans-Jörg Schurr and Athénaïs Vaginay

16:30 — **Public transport to social event**
Tramway T1/T4 to station « Charpennes », then Metro A to station « Bellecour »

17:00–18:00 — **Social event : guided tour of historic city center (to be confirmed)**
2h, outdoor walking on flat terrain
Starting point : Place Bellecour - 69002 Lyon

19:00 — **Transport to dinner**
Public transport suggestion : Metro A to station « Massena » and 700m walk

20:00 — **Dinner (≈2h)**
Brasserie de l'Est - 14 Place Jules Ferry, 69006 Lyon

Friday 12/09

Chair Sabine Pérès

09:00–09:30 — **Invited talk: Predicting metabolic interactions between multiple species from first principles**
Jörg Stellling
Abstract

Continuous and hybrid models — *Chair Stefan Haar*

10:00 — **Efficient stochastic simulation of gene regulatory networks using hybrid models of transcriptional bursting**
Mathilde Gaillard and Ulysse Herbach

10:30 — **Coffee Break**

11:00 — **Exploring Metastable Dynamics of Gene Regulatory Networks with ISOKANN**
Maryam Yousefian, Luca Donati, Alexander Sikorski, Marcus Weber and Susanna Röblitz

Rule-based models session — *Chair Linda Brodo*

11:30 — **Reachability Analysis for Parametric Rule-Based Models**
Jerome Feret and Rebecca Ghidini

12:00 — **A rule-based modeling approach for studying animal collectives: a case study of juvenile honeybee thermotaxis**
Matthieu Bouguéon, Tatjana Petrov and Albin Salazar

12:30 — **A Formal Approach to Identify Structural Patterns in RNA**
Michele Loreti, Michela Quadrini, Matteo Scoccia and Luca Tesei

13:00 — **Closing session**

13:30–14:00 — **Lunch**