

**Coordonator: Prof. Laurentiu Leustean**

## **1. Proof mining and graph matching**

Y. Lu, K. Huang, C.-L. Liu, [A fast projected fixed-point algorithm for large graph matching](#), Pattern Recognition 60 (2016), 971-982.

Useful references:

1. U. Kohlenbach, [Recent Progress in Proof Mining in Nonlinear Analysis](#), 2017, to appear in IFCoLog Journal of Logic and its Application, Special issue with invited articles by recipients of a Gödel Centenary Research Prize Fellowship.
2. K. Mandal, B. Alomair, R. Poovendran, [Secure Error-Tolerant Graph Matching Protocols](#), Cryptology ePrint Archive, 2016.
3. F. Emmert-Streib, M. Dehmer, Y. Shi, [Fifty years of graph matching, network alignment and network comparison](#), Information Sciences 10 (2016), 180-197.
4. M. Zaslavskiy, [Graph matching and its application in computer vision and bioinformatics](#), PhD Thesis, ParisTech, 2010.

## **2. Logics of Dynamical Systems**

A. Platzer, Logics of Dynamical Systems, 27th Annual ACM/IEEE Symposium on Logic in Computer Science (LICS), 2012, <http://symbolaris.com/pub/lds-lics.pdf>

Useful references:

1. A. Platzer, [Logical Foundations of Cyber-Physical Systems](#), 2017.
2. A. Platzer, [Dynamic Logic for Dynamical Systems](#), Marktoberdorf Summer School on Logical Methods for Safety and Security of Software Systems, 2017.

## **3. Logic and Deep Learning – Logic tensor networks**

L. Serafini, A. d'Avila Garcez, [Logic Tensor Networks: Deep Learning and Logical Reasoning from Data and Knowledge](#), 11th International Workshop on Neural-Symbolic Learning and Reasoning (NeSy16), 2016.

Useful references:

1. L. Serafini, I. Donadello, A. d'Avila Garcez, [Learning and reasoning in logic tensor networks](#), 2017.
2. L. Serafini, [Logic tensor networks](#), 2nd Conference on Artificial Intelligence and Theorem Proving (AITP), 2017.
3. A. d'Avila Garcez, L. Serafini, [Logic Tensor Networks \(extended abstract\)](#), Human-Like Computing Machine Intelligence Workshop (MI20-HLC), 2017.
4. A. Donadello, L. Serafini, A. d'Avila Garcez, [Logic Tensor Networks for Semantic Image Interpretation](#), Proceedings of the 26th International Joint Conference on Artificial Intelligence (IJCAI), 2017.

## 4. Type Systems and Security

M. Bugliesi, S. Calzavara, F. Eigner, M. Maffei, [Affine Refinement Types for Secure Distributed Programming](#), ACM Transactions on Programming Languages and Systems (TOPLAS), 2015

Useful references:

1. J. Bengtson, K. Bhargavan, C. Fournet, A.D. Gordon, S. Maffei, [Refinement Types for Secure Implementations](#), ACM Transactions on Programming Languages and Systems (TOPLAS), 2011.
2. M. Bugliesi, S. Calzavara, F. Eigner, M. Maffei, [Logical Foundations of Secure Resource Management in Protocol Implementations](#), International Conference on Principles of Security and Trust (POST), 2013.
3. M. Maffei, [Security and Privacy by Typing in Cryptographic Systems](#), Tutorial at ACM SIGPLAN Symposium on Principles of Programming Languages (POPL), 2016.