Irina Nicolae

Machine Learning Researcher

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Areas of Expertise

Machine Learning and Data Analysis.
My interests include: **metric and similarity learning, sparse methods, time series, convex optimization, statistical learning theory**.

Work Experience

2013 **Automatic Analysis for Feature Selection**, *Criteo*, Paris, France.
Designed and developed an internal web application that helps discover new features which improve classification accuracy. The analysis is done by replaying production logs (6 months internship).

2012 **Interface for Hardware and Software in HPC**, *Bull HPC*, Grenoble, France.
Created a web application for managing the design and development of a hardware component (3 months internship).

2010–2011 **System Verification using Randomized Algorithms**, *LIG, Mescal*, Grenoble, France.
Conducted a research study on randomized graph search algorithms for state space exploration in model checking (6 months internship).

2008 **Web Developer**, *Emotion Concept*, Bucharest, Romania.
Web development, database design, system maintenance (8 months internship, part-time).

Education

2013–present **Ph.D. Candidate**, *Laboratoire Hubert Curien UMR CNRS 5516, Université Jean Monnet*, Saint-Etienne, France.

- Title: **New Theoretical Frameworks in Metric Learning**.
- Contributions: developed new metric learning algorithms for classification of data represented as feature vectors or multivariate time series, with theoretical guarantees on their performance.
- Theoretical frameworks: Rademacher complexity, uniform stability, algorithmic robustness.
- Advisors: Professor Marc Sebban & Professor Éric Gaussier.
- Expected defense: October 2016.

2011–2013 **MSc in Computer Science**, *Ensimag, Grenoble INP*, France, Major in Information Systems.

- Courses: machine learning, information retrieval, statistics, large-scale and cloud computing.

2009–2010 **BSc in Computer Science**, *Université Joseph Fourier*, Grenoble, France, Erasmus student.

2007–2011 **BSc in Computer Science**, *Politehnica University of Bucharest*, Romania, Ranking: 1/9.

Computer skills

OS Linux, OS X, Windows
Programming Python, C, Java
Tools CVX, Mosek, scikit-learn, octave
Markup LaTeX, HTML
Certificates IBM Academic Associate on DB2, *IBM* (2011), Database Design and Programming, *Oracle Academy* (2007).

Professional Skills

- Good synthesis and writing skills.
- Pragmatic and organized.
- Fast learner.
- Teamworking.

Other Professional Activities

Organizer IDA International Symposium 2015, High-Dimensional Learning and Optimization Summer School 2015, IPW Summer School 2009, CEOI Competition 2009.

Editor Proceedings of the 1st International Workshop on Advanced Analytics and Learning on Temporal Data (AALTD), co-located with ECML/PKDD 2015, `ceur-ws.org/Vol-1425`.

Reviewer NIPS 2016, ICML 2016, IEEE DSAA Conference 2015.

Supervision Co-supervisor of the 2 months internship of Valentin Honoré on **choosing landmarks for temporal metric learning** (Laboratoire Hubert Curien, 2015).

Teaching (total of 64 hours, taught in French)

- **Introduction to Office Tools and Latex**. Université Jean Monnet, Saint-Etienne, France. 28 hours of lab sessions.
- **Computer Science**. Université Jean Monnet, Saint-Etienne, France. 36 hours of lab sessions. Introduction to divide-and-conquer algorithms, trees, graphs, automata, regular expressions.

Languages

Romanian Native

English Fluent *TOEIC Score 990/990 (May 2012)*

French Fluent

Interests

- Argentine tango
- Running – half marathon finisher
- Skiing
- Reading

Publications

Articles in Peer-Reviewed International Conferences

[1] M.-I. Nicolae, É. Gaussier, A. Habrard, and M. Sebban. Joint semi-supervised similarity learning for linear classification. In *Proceedings of the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML/PKDD)*, pages 594–609, 2015.

[2] M.-I. Nicolae, M. Sebban, A. Habrard, É. Gaussier, and M.-R. Amini. Algorithmic robustness for semi-supervised (ϵ, γ, τ)-good metric learning. In *Proceedings of the 22nd International Conference on Neural Information Processing (ICONIP)*, pages 253–263, 2015.

Articles in Peer-Reviewed International Workshops

[3] M.-I. Nicolae, M. Sebban, A. Habrard, É. Gaussier, and M.-R. Amini. Algorithmic robustness for semi-supervised (ϵ, γ, τ)-good metric learning. In *ICLR Workshop*, 2015. Poster presentation.

Articles in Peer-Reviewed French Conferences

[4] M.-I. Nicolae, É. Gaussier, A. Habrard, and M. Sebban. Apprentissage joint semi-supervisé de bonnes similarités. In *French Conference on Machine Learning (CAp)*, 2015.

[5] M.-I. Nicolae, É. Gaussier, A. Habrard, and M. Sebban. Apprentissage de similarités pour la classification de séries temporelles multivariées. In *French Conference on Machine Learning (CAp)*, 2016.

Referees

Éric Gaussier
Professor.
Laboratoire d'Informatique de Grenoble (LIG).
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