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Curriculum Vitæ

Laszlo SZATHMARY, PhD

Current Position

since Sept. 2015 Associate professor at the University of Debrecen, Department of IT
(Debrecen, Hungary)

Previous Positions

Jan. 2012–Aug. 2015 Assistant professor at the University of Debrecen, Department of IT
(Debrecen, Hungary)
Oct.–Nov. 2011 Guest researcher at the French National Institute for Research in
Computer Science and Control (INRIA) in the team Orpailleur (Nancy, France)
Jan. 2008–Oct. 2011 Postdoctoral research fellow at UQAM (Université du Québec à Montréal)
in the LATECE laboratory (Montreal, Canada)
Sept.–Dec. 2007 Non-permanent researcher at the French National Institute for Research in
Computer Science and Control (INRIA) in the team Orpailleur (Nancy, France)

School Graduates

2002–2006 PhD Degree in Computer Science
University Henri Poincaré, Nancy 1, France
2001–2002 DEA (5th year degree, equivalent to M.Sc.) in Computer Science
University Henri Poincaré, Nancy 1, France
1996–2001 Master Degree in Computer Science
University of Debrecen, Hungary

Additional Studies

Sept. 2007 Participation at the Reasoning Web 2007 *Summer School* in Dresden, Germany
July 2003 Participation at the European *Summer School* on Ontological Engineering and the
Semantic Web (SSSW-2003) in Cercedilla (near Madrid), Spain
Sept. 2002 Participation at the European Knowledge Management Forum *Summer School* at
Sophia-Antipolis in Nice, France
1999–2000 A one-year *Erasmus scholarship* in Paderborn, Germany

Technical Skills

<i>Key Programming Languages:</i>	Python, Java
<i>Other Programming Languages:</i>	C, C++, Perl, PHP, SQL, bash
<i>Web Technologies:</i>	HTML, CSS, JavaScript, XML, JSON, PHP, Python, NodeJS
<i>Operating Systems:</i>	Unix/Linux, Windows
<i>Office Applications:</i>	L ^A T _E X, vi(m), Microsoft Office, LibreOffice

Research Interests

- data mining
- formal concept analysis and its applications
- artificial intelligence
- database systems
- knowledge management/representation

Teaching Activities

Legend: Lec. – lecture, Tut. – classroom tutorial, Lab. – computer lab. work

2012-2013: assistant professor at University of Debrecen, Hungary

- Introduction to the Python Programming Language (Lab.)
- Operating Systems 2 (Lec. + Lab.)
- Introduction to Computer Science (Lab.)

2011-2012: assistant professor at University of Debrecen, Hungary

- Data Structures and Algorithms (Lec. + Tut.)
- Operating Systems (Lab.)

2006-2007: teaching assistant and researcher at University Henri Poincaré, Nancy 1, France

- Relational databases with PostgreSQL (Lec. + Tut. + Lab.)
- Programming in Java (Tut. + Lab.)
- Programming environment (Tut. + Lab.)
- Introduction to Unix (Lab.)

2005-2006: teaching assistant and researcher at University Henri Poincaré, Nancy 1, France

- Relational databases with PostgreSQL (Lec. + Tut. + Lab.)
- Databases with Oracle (Lab.)
- Programming in Java (Lab.)
- Programming environment (Lab.)
- Office applications with Microsoft Office (Lab.)

2004-2005: teaching assistant at University Henri Poincaré, Nancy 1, France

- Programming in C (Lab.)
- Office applications with OpenOffice (Lab.)

1998-1999: teaching assistant at University of Debrecen, Hungary

- Programming in C (Lab.)
- Office applications (Lab.)
- Introduction to informatics (Lab.)

Trainee Supervisions

Supervised several students during their training periods, from several educational levels (from 2nd to 4th year of studies).

Competences

Foreign Languages:

English: advanced (English technical translator diploma, ECL C1 exam)
French: advanced (DELF1, DELF2, DALF C1 exams)
German: advanced (DSH/Oberstufe exam)
Hungarian: mother tongue

Miscellaneous:

- Main developer of the CORON data mining platform (<http://coron.loria.fr>)
- My Erdős number is 4
- Responsible of the team in the technical and network administrators-users interest group of the LORIA laboratory (COMIN) during one year (2005–2006)
- Member of the GALICIA development team (<http://sourceforge.net/projects/galicia>)
- Student volunteer at the ECOOP 2001 conference, Budapest, Hungary
- Student volunteer at the ECOOP 2006 conference, Nantes, France
- Owner of the “Python Adventures” technical blog (<http://pythonadventures.wordpress.com/>)
- Owner of “The Ubuntu Incident” technical blog (<http://ubuntuinincident.wordpress.com/>)
- My GitHub profile: <https://github.com/jabbalaci>

Awards

Best paper award at the conference EGC 2006 in Lille, France. Title of the paper: “Towards Rare Itemset Extraction” (published in French).

Leisure Time Activities

Sports: ice-skating, krav maga. *Dance:* rock & roll. *Reading:* science-fiction, adventure.

PhD Thesis Overview

- **Title:** **Symbolic Data Mining Methods with the Coron Platform**
- **Date of thesis defense:** November 24, 2006
- **Location:** University Henri Poincaré, Nancy 1, laboratory of LORIA – INRIA Lorraine, France
- **Note:** the thesis is written in English and it includes an extended abstract in French

Thesis Abstract

The main topic of this thesis is *knowledge discovery in databases* (KDD). More precisely, we have investigated two of the most important tasks of KDD today, namely itemset extraction and association rule generation. Throughout our work we have borne in mind that our goal is to find *interesting* association rules from various points of view: for efficient mining purposes, for minimizing the set of extracted rules and for finding intelligible (and easily interpretable) knowledge units. We have developed and adapted specific algorithms in order to achieve this goal.

The main contributions of this thesis are: **(1)** We have developed and adapted algorithms for finding minimal non-redundant association rules; **(2)** We have defined a new basis for association rules called Closed Rules; **(3)** We have investigated an important but relatively unexplored field of KDD namely the extraction of rare itemsets and rare association rules; **(4)** We have packaged our algorithms and a collection of other algorithms along with other auxiliary operations for KDD into a unified software toolkit called CORON.

Keywords: knowledge discovery in databases (KDD), data mining, itemset extraction, association rule generation, rare item problem.

Software – The CORON Toolkit

I have implemented all the algorithms presented in my thesis in a unified software platform called CORON. CORON is a domain and platform independent, multi-purposed data mining toolkit, which incorporates not only a rich collection of data mining algorithms, but also allows a number of auxiliary operations. To the best of our knowledge, a data mining toolkit designed specifically for itemset extraction and association rule generation like CORON does not exist elsewhere. CORON also provides support for preparing and filtering data, and for interpreting the extracted units of knowledge.

Board of Examiners

- Claude Godart, Professeur, UHP Nancy 1, France (president)
- Bruno Crémilleux, Professeur, Université de Caen, France (rapporteur)
- Sergei O. Kuznetsov, Professor, Higher School of Economics, Moscow, Russia (rapporteur)
- Katalin Bognár, Associate professor, University of Debrecen, Hungary (evaluator)
- Marzena Kryszkiewicz, Associate professor, Warsaw Univ. of Technology, Poland (evaluator)
- Amedeo Napoli, Directeur de recherche CNRS, UHP Nancy 1, France (supervisor)

References

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