

Luiza Antonie
M.Sc., Ph.D.

Education

- 2002-2008 Ph.D. in Computing Science, University of Alberta, Canada (GPA: 97.2%)
Thesis: *Associative Classifiers: Improvements and Potential*
Advisors: Dr. Osmar R. Zaiane, Dr. Robert Holte
- 2000-2002 M.Sc. in Computing Science, University of Alberta, Canada (GPA: 93.3%)
Thesis: *Categorizing Digital Documents by Associating Content Features*
Advisor: Dr. Osmar R. Zaiane
- 1995-2000 B.Sc. in Electrical Engineering and Computer Science (English Stream), Politehnica
University of Bucharest, Romania
Thesis: *Digital Mammography Classification*
Advisor: Dr. Rodica Tuduce

Academic Experience

- Since Nov 2012 *Postdoctoral Fellow*, Department of Economics and Finance, University of Guelph,
Canada.
- Since July 2011 *Adjunct Professor*, School of Computer Science, University of Guelph, Canada.
- Since Sep 2010 *Special Graduate Faculty*, Department of Mathematics and Statistics, University of
Guelph, Canada.
- Sep 2009 – Oct 2011 *Postdoctoral Fellow*, Department of Economics and Finance, University of Guelph,
Canada.
- May – Aug 2010 *Sessional Lecturer*, School of Computer Science, University of Guelph, Canada.
- Jan – Aug 2009 *Sessional Lecturer*, David R. Cheriton School of Computer Science, University of
Waterloo, Canada.

Funding

- 2010 *Google Research Award* (\$25000 USD), Google Inc
Project: Creating Longitudinal Data From Census Records
Co-investigator: Dr. Kris Inwood, Department of Economics and Finance, University of
Guelph.
- 2009-2011 *Post-Doctoral Fellowship* in Historical Record Linkage and Longitudinal Data
(\$50000 CAD/year), Ontario Ministry of Research and Innovation.
- 2003-2007 *Alberta Ingenuity Studentship* (\$15000 CAD/year), Alberta Ingenuity Fund, Alberta,
Canada.
- 2003-2007 *iCore Scholarship* (\$15000 CAD/year), iCore, Alberta, Canada.

- 2002-2003 *Alberta Ingenuity Studentship* (\$20000 CAD), Alberta Ingenuity Fund, Alberta, Canada
- 2004 *J Gordin Kaplan Graduate Student Award* (\$800 CAD), Faculty of Graduate Studies, University of Alberta, Canada; based on merit, awarded to help with the cost of conference related travel expenses
- 2002 *J Gordin Kaplan Graduate Student Award* (\$600 CAD), Faculty of Graduate Studies, University of Alberta, Canada; based on merit, awarded to help with the cost of conference related travel expenses
- 2000 *Socrates Scholarship* (\$4000 US), European Union and Politehnica University of Bucharest, Romania; based on academic achievements, awarded for support as an exchange student at the Department of Medical Physics, University of Patras, Greece
- 1995-2000 *University Academic Scholarship* (\$400-\$500 CAD/year), Politehnica University of Bucharest, Romania; based on academic merit, awarded to the students with the highest GPA at the end of each term

Publications

(*) Number of references based on Google Scholar as of June 2013.

Journals

- **Luiza Antonie**, Kyrylo Bessonov, *Biologically Relevant Association Rules for Classification of Microarray Data*, ACM SIGAPP Applied Computing Review, Vol. 12, No. 1, pp 12-23, April 2012
- **Luiza Antonie**, Kris Inwood, Dan Lizotte and Andrew Ross, *Tracking People over Time in 19th Century Canada*, submitted to Machine Learning Journal, Machine Learning for Science and Society Issue, submitted November 2012 (revision completed)
- Mateen Shaikh, **Luiza Antonie** and Paul D. McNicholas, *Standardizing Interestingness Measures for Association Rules*, submitted to Computational Statistics Journal, Submitted February 2012 (revision completed)

Book Chapters

- **Luiza Antonie**, Peter Baskerville, Kris Inwood, Andrew Ross, *Change amid continuity in Canadian work patterns during the 1870s*. In: Lives in Transition: Longitudinal Perspectives from Historical Sources (2014). Forthcoming.
- **Maria-Luiza Antonie**, David Chodos, Osmar R. Zaiane, *Variations on Associative Classifiers and Classification Results Analyses*, Post-Mining of Association Rules: Techniques for Effective Knowledge Extraction, 2009 (2 citation *)
- **Maria-Luiza Antonie**, Osmar R. Zaiane, Alexandru Coman, *Associative Classifiers for Medical Images*, Lecture Notes in Artificial Intelligence 2797, Mining Multimedia and Complex Data, pp 68-83, Springer-Verlag, 2003. (56 citations *)

International Conferences

- J. Andrew Ross, **Luiza Antonie**, *Four Generations of Census Transcription: A Comparison*, 36th Annual Meeting of the Social Science History Association, Boston, 2011
- **Luiza Antonie**, Kyrylo Bessonov, *Classifying Microarray Data with Association Rules*, ACM-SAC 2011 Conference Track on Bioinformatics and Computational Systems Biology (BIO), TaiChung, Taiwan, March 21-25, 2011. Best paper award in the Applications track. (1 citation *)

- **Luiza Antonie**, Peter Baskerville, Kris Inwood, Andrew Ross, *Labour Market Transitions during the 1870s*, 35th Annual Meeting of the Social Science History Association, Chicago, 2010
- Abhishek Srivastava, Osmar R. Zaiane, **Maria-Luiza Antonie**, *Feature Space Enrichment by Incorporation of Implicit Features for Effective Classification*, Eleventh International Database Engineering and Applications Symposium (IDEAS 2007), Banff, Canada, September 6-8, 2007.
- **Maria-Luiza Antonie**, Osmar R. Zaiane, Robert C. Holte, *Learning to Use a Learned Model: A Two-Stage Approach to Classification*, The Sixth IEEE International Conference on Data Mining (ICDM'06), Hong Kong, China, December 18 - 22, 2006. (29 citations *)
- Osmar R. Zaiane, **Maria-Luiza Antonie**, *On Pruning and Tuning Rules for Associative Classifiers*, Ninth International Conference on Knowledge-Based Intelligence Information & Engineering Systems (KES'05), pp 966-973, Melbourne, Australia, September 2005. (28 citations *)
- Rafal Rak, Wojciech Stach, Osmar R. Zaiane, **Maria-Luiza Antonie**, *Considering Re-occurring Features in Associative Classifiers*, Ninth Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD'05), pp 240-248, Hanoi, Vietnam, May 2005. (23 citations *)
- **Maria-Luiza Antonie** and Osmar R. Zaiane, *Mining Positive and Negative Association Rules: An Approach for Confined Rules*, 8th European Conference on Principles and Practice of Knowledge Discovery in Databases (PKDD 04), Springer Verlag LNCS 3202, pp 27-38, Pisa, Italy, September 20-24, 2004. (128 citations *)
- **Maria-Luiza Antonie**, Osmar R. Zaiane, *Text Document Categorization by Term Association*, in Proc. of the IEEE International Conference on Data Mining (ICDM'2002), pp 19-26, Maebashi City, Japan, December 9 - 12, 2002. (120 citations *)
- Osmar R. Zaiane, **Maria-Luiza Antonie**, *Classifying Text Documents by Associating Terms with Text Categories*, in Proc. of the Thirteenth Australasian Database Conference (ADC'02), Melbourne, Australia, January 28-February 1, 2002. (114 citations *)

Peer-reviewed workshops

- **Maria-Luiza Antonie** and Osmar R. Zaiane, *An Associative Classifier based on Positive and Negative Rules*, 9th ACM SIGMOD Workshop on Research Issues in Data Mining and Knowledge Discovery (DMKD-04), pp 64-69, Paris, France, June 2004. (84 citations *)
- Osmar R. Zaiane, **Maria-Luiza Antonie**, Alexandru Coman, *Mammography Classification by an Association Rule-Based Classifier*, Third Intl. ACM SIGKDD Workshop on Multimedia Data Mining (MDM/KDD'2002) in conjunction with Eighth ACM SIGKDD, pp. 62-69, Edmonton, Alberta, Canada, 17-19 July 2002. (104 citations *)
- **Maria-Luiza Antonie**, Osmar R. Zaiane, Alexandru Coman, *Application of Data Mining Techniques for Medical Image Classification*, in Proc. of Second Intl. Workshop on Multimedia Data Mining (MDM/KDD'2001) in conjunction with Seventh ACM SIGKDD, pp. 94-101, San Francisco, CA, August 26, 2001. (221 citations *)

Non-reviewed workshops

- **Luiza Antonie**, Peter Baskerville, Kris Inwood, Andrew Ross, *An Automated Record Linkage System – Linking 1871 Canadian Census to 1881 Canadian Census*, Workshop on Longitudinal Analysis, Historical Sources and Generational Change, Guelph, Canada, May 2010.

Technical reports and posters

- Mateen Shaikh, **Luiza Antonie**, Paul D. McNicholas, *Modelling with Association Rules*, 39th Annual Meeting of the Statistical Society of Canada, Nova Scotia, 2011

- **Luiza Antonie**, Peter Baskerville, Kris Inwood, Andrew Ross, *An Automated Record Linkage System – Linking 1871 Canadian Census to 1881 Canadian Census*, Poster, Women in Machine Learning Workshop, Vancouver, Canada, December 2010.
- **Maria-Luiza Antonie**, Osmar R. Zaiane, Robert C. Holte, *Associative Classifiers: Improvements and Potential*, Poster, Women in Machine Learning Workshop, Orlando, 2007
- **Maria-Luiza Antonie**, Osmar R. Zaiane, Robert C. Holte, *Improving Associative Classifiers*, Poster, Women in Machine Learning Workshop, San Diego, 2006
- Osmar R. Zaiane, **Maria-Luiza Antonie**, *Categorizing multimedia documents*, Poster, CanDB, Edmonton, 2002
- Osmar R. Zaiane, **Maria-Luiza Antonie**, *Automatically categorizing text and web documents*, Poster, TeleLearning Conference, Vancouver, 2001
- Osmar R. Zaiane, **Maria-Luiza Antonie**, *Associating Terms with Text Categories*, Technical Report TR01-04, Department of Computing Science, University of Alberta, April 2001

Invited Talks and Presentations

- **Luiza Antonie**, *Data Mining and Association Rules*, Invited Talk in CS886: Advanced Topics in Artificial Intelligence: Applied Machine Learning, David R. Cheriton School of Computer Science, University of Waterloo, June 2013
- **Luiza Antonie**, *An Automated Record Linkage System – Linking 1871 Canadian Census to 1881 Canadian Census*, Internal Department Seminar, Department of Economics and Finance, University of Guelph, March 2011
- **Luiza Antonie**, *An Automated Record Linkage System – Linking 1871 Canadian Census to 1881 Canadian Census*, Workshop on Longitudinal Analysis, Historical Sources and Generational Change, Guelph, Canada, May 2010
- **Maria-Luiza Antonie**, *Associative Classifiers: Improvements and Potential*, Graduate Seminar, Department of Computing Science, University of Alberta, Canada, September 2008
- **Maria-Luiza Antonie**, *Learning to Use a Learned Model: A Two-Stage Approach to Classification*, The Sixth IEEE International Conference on Data Mining (ICDM'06), Hong Kong, China, 2006
- **Maria-Luiza Antonie**, *Extensions to an Associative Classifier*, Database & Data Mining Lab Seminars at Simon Fraser University, Vancouver, Canada, April 2005
- **Maria-Luiza Antonie**, *Mining Positive and Negative Association Rules: An Approach for Confined Rules*, 8th European Conference on Principles and Practice of Knowledge Discovery in Databases (PKDD 04), Pisa, Italy, 2004.
- **Maria-Luiza Antonie**, *Mining Thick Skylines over Large Databases*, 8th European Conference on Principles and Practice of Knowledge Discovery in Databases (PKDD'04), Pisa, Italy, 2004. – presented on behalf of Wen Jin, Jiawei Han and Martin Ester
- **Maria-Luiza Antonie**, *Classification in the Presence of Rare Classes*, the 1st Database Workshop, University of Alberta, Canada, March 2004.
- **Maria-Luiza Antonie**, *Text Document Categorization by Term Association*, in Proc. of the IEEE International Conference on Data Mining (ICDM'2002), Maebashi City, Japan, 2002
- **Maria-Luiza Antonie**, *Mammography Classification by an Association Rule-Based Classifier*, Third Intl. ACM SIGKDD Workshop on Multimedia Data Mining (MDM/KDD'2002, Edmonton, Alberta, Canada, 2002
- **Maria-Luiza Antonie**, *Association Rule Mining*, Database Research Meeting, Department of Computing Science, University of Alberta, Canada, March 2003.
- **Maria-Luiza Antonie**, *Categorizing Digital Documents by Associating Content Features*, Joint Meeting of Database Groups at University of Alberta and University of Calgary, Canada, November 2002.
- **Maria-Luiza Antonie**, *Categorizing Digital Documents by Associating Content Features*, Graduate Seminar, Department of Computing Science, University of Alberta, Canada, July 2002.

Research Interests

- Data Mining & Machine Learning
- Application of classification to real-world problems
- Association Rules and their applications
- Text Mining and Natural Language Processing

Research Experience

- Since Sep 2009 *Postdoctoral Fellow*, Department of Economics and Finance, University of Guelph, Canada. I am the lead computer scientist for the People in Motion project (<http://www.people-in-motion.ca/>), an interdisciplinary project (history, economics and computer science) focussed on understanding how experience, family circumstance and even genetics affect adult health, migration and social mobility. I am leading the work on designing, developing and evaluating a system that builds longitudinal data from historical censuses.
- 2007-2008 *Research Assistant*, under the supervision of Dr. Robert Holte and Dr. Osmar Zaïane, Department of Computing Sciences, University of Alberta, Canada. I was responsible for investigating how rule redundancy affects the performance of associative classifiers.
- Jan-Aug 2004 *Research Assistant*, Brain Tumor Growth Prediction, lead researcher Dr. Russ Greiner, Alberta Ingenuity Centre for Machine Learning, Department of Computing Sciences, University of Alberta, Canada. I was responsible for modeling the tumor growth over time.
- 2001-2002 *Research Assistant*, under the supervision of Dr. Osmar Zaïane, Department of Computing Sciences, University of Alberta, Canada. I was responsible for surveying the literature on associative classifiers.
- Apr-Jul 2000 *Research Assistant*, under the supervision of Dr. A. Bezerianos, Department of Medical Physics, University of Patras, Greece. I was responsible for applying and evaluating a support vector machine model for mammography classification.
- 2002 Participant in KDD Cup 2002, contest associated with KDD 2002 (International Conference on Knowledge Discovery and Data Mining). Task to be researched and solved: Yeast Gene Regulation Prediction. Ranked 6th out of 54 participating teams (ranked 1st among the 6 Canadian teams). Team members: Maria-Luiza Antonie, Samer Nassar, Joerg Sander, Osmar Zaïane. I had a major role in researching and completing this task.

Teaching Interests

- Data Mining
- Machine Learning
- Data Structures and Algorithms
- Database Management Systems

Teaching Experience

- May-Aug 2010 *Sessional Lecturer, Knowledge Discovery and Data Mining (CIS6650)*, School of Computer Science, University of Guelph, Canada.

- Jan-Aug 2009 *Sessional Lecturer, Introduction to Computer Usage (CS100)*, David R. Cheriton School of Computer Science, University of Waterloo, Canada.
- 2000-2005 *Teaching Assistant, Structural Programming and Data Structures (CMPUT 114)* (Fall 2000, Winter 2001, Winter 2002, Fall 2002, Winter 2003, Fall 2003, Winter 2005), Department of Computing, University of Alberta, Canada.

Student Supervision

- Ph.D. Students* *Mateen Shaikh* (Sep 2010-), Department of Mathematics and Statistics, University of Guelph. Part of the supervisory committee, Department of Mathematics and Statistics, University of Guelph.
- M.Sc. Students* *Laura Richards* (Sep 2011-), School of Computer Science, University of Guelph. Co-supervised with Dr. Gary Grewal, School of Computer Science, University of Guelph and Dr. Shawki Areibi, School of Engineering, University of Guelph

Research projects

Kyrylo Bessonov (2010), M.Sc. student, School of Computer Science, University of Guelph. Published in proceedings of ACM-SAC BIO'11 (best paper award) and in ACM SIGAPP ACR journal

Rafal Rak (2004), M.Sc. student, Department of Electrical Engineering, University of Alberta. Published in proceedings of PAKDD'05.

Wojciech Stach (2004), M.Sc. student, Department of Electrical Engineering, University of Alberta. Published in proceedings of PAKDD'05.

Service

- **Organizer** for the Workshop for Women in Machine Learning (WiML) 2008
- **Program Committee Member** for ACM-SAC Conference Track on Bioinformatics and Computational Systems Biology 2010, 2011, 2014
- **Program Committee Member** for International Conference on Data Mining (ICDM) 2007, 2010, 2011, 2013
- **Program Committee Member** for Workshop for Women in Machine Learning (WiML) 2009
- **Reviewer:** Data Mining and Knowledge Discovery (DMKD) journal (since 2009); Data & Knowledge Engineering (DKE) journal (since 2005); Knowledge and Information Systems (KAIS) journal (since 2005)
- **External Reviewer:** International Conference on Data Mining (ICDM'06, ICDM'05, ICDM'04, ICDM'03, ICDM'02); Advanced Data Mining and Applications (ADMA'05); International Conference on Knowledge Discovery and Data Mining (KDD'06, KDD'05, KDD'04); ACM Symposium on Applied Computing (ACMSAC); Australasian Conference on Knowledge Discovery and Data Mining (ausDM'04); Conference on Information and Knowledge Management (CIKM'03); European Conference on Principles and Practice of Knowledge Discovery in Databases (PKDD'04); SIAM International Conference in Data Mining (SDM'03, SIAM'04); International Symposium on String Processing and Information Retrieval (SPIRE'03)
- **Web administrator** (responsible with the submission and review process): Web Mining for Usage Patterns and User Profiles (WebKDD) 2002; Third International Workshop on Multimedia Data Mining (MDMKDD) 2002.
- **Member** of General Faculty Council, University of Alberta, Canada, 2006-2007
- **Volunteer Speaker** at Women in IT Conference, University of Alberta, 2007
- **Volunteer** for Women in IT Conference, University of Alberta, 2006
- **Volunteer** for Buddy Program (helping new students accommodate with the department and the city), Department of Computing Science, University of Alberta, 2002
- **Participant** in United Way fund raising campaign (Turkey Trot 4km run/walk), 2000-2006