

Jordan Frank

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RESEARCH INTERESTS	Machine learning; Artificial intelligence; Big data; Bayesian nonparametrics; Nonlinear time-series analysis; Reinforcement learning; Reasoning Under Uncertainty; Ubiquitous computing; Lifelong learning; Applications of Machine Learning and Artificial Intelligence.	
CURRENT POSITION	PhD Candidate, School of Computer Science, McGill University.	
EDUCATION	PhD Candidate, McGill University M.Sc. Computer Science, Dean's Honour List, McGill University B.Sc. Computer Science with Co-op Designation, Simon Fraser University	August, 2012 August, 2008 April 2006
HONORS, AWARDS & FELLOWSHIPS	K. Downes Graduate Award and Graduate Excellence Fellowship Max E. Binz Fellowship Molson and Hilton Hart Fellowship in Science NSERC Alexander Graham Bell PhD Canadian Graduate Scholarship Dean's Honour List for Master's Thesis, McGill University Golden Key International Honour Society	2011 – 2012 2010 – 2011 2010 – 2011 2009 – 2012 2008 1998

EXPERIENCE

McGill University, School of Computer Science	Montreal, Canada
<i>Research Assistant</i> (Supervisor: Doina Precup)	Fall 2006 – 2012
<i>Course Lecturer:</i>	
COMP202: Introduction to Computer Science (37 students, 39 lecture-hours)	Summer 2008
<i>Teaching Assistant:</i>	
COMP102: Computers and Computing (30 students)	Fall 2010
COMP202: Introduction to Computer Science (350 students)	Fall 2006, Winter 2009
COMP424: Artificial Intelligence I (80 students)	Winter 2010
COMP652: Machine Learning (Graduate Course, 60 students)	Fall 2008, Fall 2009
<i>System Administrator</i> (managed 20 workstations and 4 servers)	2009 – 2012
Assisted in organization of weekly departmental colloquium	2008 – 2012
 Nitobi Software (now Adobe)	 Vancouver, Canada
<i>Senior Software Engineer</i>	Dec., 1998 – Dec., 2005
Projects and responsibilities:	
Systems and network administrator, including setup and maintenance of http, email, and database servers.	
Design and development of an online content management and web publishing system.	
Web-based software component development for clients such as TimeWarner, Bank of America, and Siemens.	
 Independent Consulting and Software Development	
Implemented Android mobile activity recognition software library for GoodHop	2011
Designed and implemented an online dating site in Ruby on Rails for Kisscafe Media INC	2006
Customized PHP billing and management software for Savoury Chef Foods	2009 – 2010

PUBLICATIONS

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|---------------------------------|---|
| JOURNALS | 1. J. Frank , S. Mannor, J. Pineau & D. Precup. Time Series Analysis Using Geometric Template Matching. <i>IEEE Transactions on Pattern Analysis and Machine Intelligence</i> . To Appear. |
| HIGHLY REFEREED CONFERENCES | 2. J. Frank , S. Mannor & D. Precup. Activity and Gait Recognition with Time-Delay Embeddings. In <i>Proceedings of the Twenty-Fourth AAAI Conference on Artificial Intelligence (AAAI '10)</i> , July, 2010. (Acceptance rate 264/982, 26.9%). |
| REFEREED CONFERENCES | 3. J. Frank , S. Mannor & D. Precup. Reinforcement learning in the presence of rare events. In <i>Proceedings of the Twenty-Fifth International Conference on Machine Learning (ICML '08)</i> . July, 2008 (Acceptance rate 155/583, 26.5%). |
| REFEREED CONFERENCES | 4. A. K. Moghaddam, J. Pineau, J. Frank , P. S. Archambault, F. Routhier, T. Audet, J. Polgar, F. Michaud & P. Boissy. Mobility Profile and Wheelchair Driving Skills of Powered Wheelchair Users: Sensor-Based Event Recognition Using a Support Vector Machine Classifier. In <i>33rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC '11)</i> , August, 2011. |
| REFEREED WORKSHOPS AND SYMPOSIA | 5. J. Frank , S. Mannor & D. Precup. Time-series analysis using time-delay embeddings. In <i>Papers from the 2011 AAAI Spring Symposium on Computational Physiology</i> . March, 2011. |
| | 6. J. Frank , S. Mannor & D. Precup. Learning state space models from time series data. <i>Multidisciplinary Symposium on Reinforcement Learning (MSRL '09)</i> . July, 2009. |
| | 7. J. Frank & D. Precup. Recognizers: A study in learning how to model temporally extended behaviors. <i>NIPS 2007 Workshop on Hierarchical Organization of Behavior: Computational, Psychological and Neural Perspectives</i> . Dec., 2007. |
| REFEREED DEMONSTRATIONS | 8. J. Frank , S. Mannor & D. Precup. Activity recognition with mobile phones. In <i>Machine Learning and Knowledge Discovery in Databases - European Conference, ECML PKDD 2011</i> . Sept., 2011. |
| | 9. J. Frank , S. Mannor & D. Precup. A novel similarity measure for time series data with applications to gait and activity recognition. In <i>Proceedings of the 12th ACM international conference adjunct papers on Ubiquitous computing (UBICOMP '10)</i> . Sept., 2010. |
| | 10. J. Frank , S. Mannor & D. Precup. Activity recognition and human gait recognition. In <i>NIPS '09 Demo Session</i> . Dec., 2009. |
| WORKSHOP PROCEEDINGS | 11. D. Wingate, C. Diuk, L. Li, M. Taylor & J. Frank . Workshop summary: Results of the 2009 reinforcement learning competition. In <i>Proceedings of the 26th Annual International Conference on Machine Learning (ICML '09)</i> . July, 2009 |
| THESES | 12. J. Frank . Reinforcement learning in the presence of rare events. <i>Masters Thesis, McGill University</i> . August, 2008. |
| OTHER PUBLICATIONS | 13. J. Frank . Is AJAX Here to Stay?, Article on XML.com. Oct., 2005. |
| | 14. J. Frank . Keeping Up With The Ajax Trend, Article on Developer.com. Nov., 2005. |
| MEDIA | 15. My work on biometric identification using gait featured on the Daily Planet program on the Discovery Channel. Aired on Nov. 03, 2010. |
| CHALLENGES & COMPETITIONS | 16. Open Challenge track of the Nokia Mobile Data Challenge. January–April, 2012. |
| PATENTS | 17. J. Frank, S. Mannor & D. Precup. Method of identification and devices thereof. <i>Patent Pending</i> . |

OPEN-SOURCE SOFTWARE

HumanSense Android Data Collection Platform: App for the Android platform that allows flexible logging and analysis of sensor data. Also includes demo of activity recognition and location discovery from wifi signals.

Time-Delay Embedding Feature Extraction Tools: Command-line tools for building classifiers based on time-delay embeddings of time-series data.

REVIEWING AND OTHER WORK

Served on the ICML 2010 (5 papers) and 2012 (7 papers), NIPS 2011 (6 papers), and ECML/PKDD 2009 (3 papers) Program Committees.

Co-organizer of the Reinforcement Learning Competition and Workshop at ICML 2008 and 2009. Designed, developed, and maintained the competition websites and active leaderboards (60 hours of work). Assisted in coordination of the workshop.

Departmental delegate for the union of graduate student teaching assistants at McGill 2008 – 2010

MISCELLANEOUS

Graduate level courses taken in the fields of Compilers, Cryptography, Machine Learning, Computer Vision, Mobile Robotics, Probabilistic Analysis of Algorithms, and Domain Theory (A grades obtained).

Well versed in C, C++, C#, Java, Perl, Python, Ruby, PHP, Javascript, SQL, XML, XSL, HTML, CSS, R, and Matlab.

Working knowledge of Assembly, Lisp and Haskell.

Extensive experience with mobile software development for Android platform, both with Java SDK and Native C++ NDK.

REFERENCES

Doina Precup (supervisor), Associate Professor, School of Computer Science, McGill University.
E-mail: dprecup@cs.mcgill.ca; Phone: (514) 398-6443.

Shie Mannor (supervisor), Associate Professor, Department of Electrical Engineering, Technion.
E-mail: shie.mannor@ee.technion.ac.il; Phone: ++972-4-829-3284.

Joelle Pineau, Associate Professor, School of Computer Science, McGill University.
E-mail: jpineau@cs.mcgill.ca; Phone: (514) 398-5432.

Gregory Dudek, Professor, School of Computer Science, McGill University.
E-mail: dudek@cim.mcgill.ca; Phone: (514) 398-4325.