Bryan R. Gibson, Ph.D.

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Objective

Actively seeking opportunities in which I can utilize machine learning technologies to solve information problems.

Education

Ph.D., Computer Science August 2015
University of Wisconsin-Madison, Madison, WI
Thesis: Using Machine Learning to Understand and Influence Human Categorization Behavior
Adviser: Prof. Xiaojin (Jerry) Zhu
Minor: *Cognitive Psychology/Statistics*

M.S., Computer Science Oct 2011
University of Wisconsin-Madison, Madison, WI

B.A., Psychology May 2001
University of Michigan, Ann Arbor, MI

Technical Skills

Matlab, R, Python, Perl, Java, C#, C++, PHP, Ruby, ActionScript, JavaScript
MongoDB, Solr, Hadoop, MySQL, PostgreSQL, LaTeX, TikZ/PGF, HTML, CSS

Employment

Data Scientist 2014 – 2015
Voxgov, New York, NY

- Designed algorithm for trending keywords and sources from continuously updated federal documents, including social media, press releases and regulations.
- Implemented topic clustering for document browsing and recommendation.
- Improved keyword extraction pipeline using syntactic cues.
- Developed new "influence" score to measure relative importance of sources.

Research Assistant/Lecturer 2009 – 2014
Prof. Xiaojin (Jerry) Zhu, University of Wisconsin-Madison, Madison, WI

- Led on design, execution and publishing of research projects regarding human categorization behavior.
- Derived and implemented human behavior models.
- Taught graduate level courses of 60+ students (Intro. to AI, Data Structures).

Research Assistant 2007 – 2008
Prof. Dragomir Radev, University of Michigan, Ann Arbor, MI

- Led development and release of major version update of software toolkit.
- Redesigned, managed and analyzed online citation network database.
- Wrote extensive software documentation and tutorials.

Systems Administrator 2002 – 2008
Interpro, University of Michigan, Ann Arbor, MI

- Maintained 75 workstations and 35 critical servers across 3 locations.
- Handled technical support for users across the globe.

Publications

Refereed Conference Papers

Bryan R. Gibson, Timothy T. Rogers, Chuck W. Kalish, and Xiaojin Zhu. What causes category-shifting in human semi-supervised learning? In **Proceedings of the 37th Annual Conference of the Cognitive Science Society (CogSci)**, 2015.

Xiaojin Zhu, Bryan R. Gibson, and Timothy T. Rogers. Co-training as a human collaboration policy. In **The 25th Conference on Artificial Intelligence (AAAI)**, 2011. (Acceptance rate: 242/975=25%).

Bryan R. Gibson, Xiaojin Zhu, Timothy T. Rogers, Chuck Kalish, and Joseph Harrison. Humans learn using manifolds, reluctantly. In **Advances in Neural Information Processing Systems (NIPS) 24**, 2010. (Selected for plenary presentation: 20/1219=2%).

Xiaojin Zhu, Bryan R. Gibson, Kwang-Sung Jun, Timothy T. Rogers, Joseph Harrison, and Chuck Kalish. Cognitive models of test-item effects in human category learning. In **The 27th International Conference on Machine Learning (ICML)**, 2010. (Acceptance rate: 152/594=26%).

Timothy T. Rogers, Charles Kalish, Bryan R. Gibson, Joseph Harrison, and Xiaojin Zhu. Semi-supervised learning is observed in a speeded but not an unspeeded 2d categorization task. In **Proceedings of the 32nd Annual Conference of the Cognitive Science Society (CogSci)**, 2010. (Poster; Acceptance rate: 599/810=74%).

Xiaojin Zhu, Timothy Rogers, and Bryan Gibson. Human rademacher complexity. In **Advances in Neural Information Processing Systems (NIPS)**, 2009. (Acceptance rate: 263/1105=24%).

Andrew Goldberg, Nathanael Fillmore, David Andrzejewski, Zhiting Xu, Bryan Gibson, and Xiaojin Zhu. May all your wishes come true: A study of wishes and how to recognize them. In **North American Chapter of the Association for Computational Linguistics - Human Language Technologies (NAACL HLT)**, 2009. (Acceptance rate: 75/260=29%).

Steven Bird, Robert Dale, Bonnie Dorr, Bryan Gibson, Mark T. Joseph, Min-Yen Kan, Dongwon Lee, Brett Powley, Dragomir R. Radev, and Yee Fan Tan. The ACL anthology reference corpus: a reference dataset for bibliographic research. In **International Conference on Language Resources and Evaluation (LREC)**, Marrakesh, Morocco, May 2008. (Acceptance rate: 620/900=69%).

Refereed Workshop Papers

Bryan R. Gibson, Kwang-Sung Jun, and Xiaojin Zhu. With a little help from the computer: Hybrid human-machine systems on bandit problems. In **NIPS 2010 Workshop on Computational Social Science and the Wisdom of Crowds**, 2010.

Journal Articles

Bryan R. Gibson, Timothy T. Rogers, and Xiaojin Zhu. Human semi-supervised learning. **Topics in Cognitive Science**, 5:132–172, 2013.

Arthur Glenberg, Jonathan Willford, Bryan R. Gibson, Andrew Goldberg, and Xiaojin Zhu. Improving reading to improve math. **Scientific Studies in Reading**, 2011.

Dragomir R. Radev, Mark Joseph, Bryan Gibson, and Pradeep Muthukrishnan. A Bibliometric and Network Analysis of the Field of Computational Linguistics. **Journal of the American Society for Information Science and Technology**, 2009.