Michael Ekstrand

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Education

2014 (expected) Ph.D in Computer Science, University of Minnesota, Minneapolis, MN.
Thesis title: *Towards Recommender Engineering: Tools and Experiments for Identifying Recommender Differences*
Advisers: Joseph A. Konstan and John T. Riedl.

2007 B.S. in Computer Engineering (With Distinction), Iowa State University, Ames, IA.

Research

2008–present **Research Assistant**, GroupLens Research, University of Minnesota.

I conducted my Ph.D research in GroupLens Research, participating in and leading a variety of projects on recommender systems, social network analysis, and social computing. In addition to carrying out original research, I have mentored several M.S., B.S., and junior Ph.D students on research projects.

In my work with GroupLens, I have produced many peer-reviewed research papers (both as lead author and as a contributing author) and built open source software to support recommender systems research.

Summer 2010 **Research Intern**, Autodesk Research, Toronto, CA.

I planned and carried out a research project to mine the user's interactions with software application and use that data to help them more effectively locate help resources.

2005–2007 **Undergraduate Research Assistant**, Scalable Computing Laboratory, Ames Laboratory, Iowa State University.

I developed software to monitor high-performance computing cluster status and usage.

Teaching

Fall 2013 **Co-instructor** (with Joseph A. Konstan), *Introduction to Recommender Systems*, Coursera MOOC and for-credit University of Minnesota course (CSCI 5980-1).

This is a dual-offering of a MOOC on Coursera (with 28,000 students who have registered at some point, and nearly 3000 still active halfway through the course) and a graduate-level for-credit University of Minnesota course with 36 students. The for-credit version uses an inverted classroom format, with students watching the Coursera lectures and completing on-line and coming to optional in-person discussion sessions during normal class time.

I have been involved all aspects of planning and teaching this course: designing assignments, recording video lectures, supporting students via the forms, hosting class discussions, and answering on-campus student questions.

Summer 2012 **Instructor**, *CSCI 1902: Structure of Computer Programming II*

I taught the summer term of CSCI 1902, Minnesota's second-term programming course, for 35 students. I was responsible for all aspects of the course; I planned the syllabus based on my previous experience as a teaching assistant and the structure used by the professors I TA'd for, wrote several of the assignments, and wrote and gave the class lectures. I also supervised two teaching assistants who wrote and led programming labs, graded work, and supported students.

Spring 2011 **Teaching Assistant**, *CSCI 5125: Collaborative and Social Computing*

This TA experience mostly consisted of grading student work and answering questions.

Fall 2010 Took *Preparing Future Faculty*, a UMN course on teaching and instructional design.

2007–2008 (3 terms)

Teaching Assistant, *CSCI 1902: Structure of Computer Programming II*

I worked with CSCI 1902 for three terms (two regular semester terms with 110 students each time, one summer term with 35 students). I designed assignments and programming labs, wrote exam questions, graded student work, hosted labs, and supported students. I also lectured on occasion. Many of the labs, assignments, and scripts I helped write are still in use when the course is offered today.

Publications

Journal Papers

- **Michael D. Ekstrand**, Michael Ludwig, and John T. Riedl. Grapht: Dependency Injection with Static Analysis and Context-Sensitive Configuration. In submission.
- **Michael D. Ekstrand**, John T. Riedl, and Joseph A. Konstan. 2011. Collaborative Filtering Recommender Systems. *Found. Trends Hum.-Comput. Interact.* 4, 2 (February 2011), 81-173. DOI=10.1561/1100000009

Refereed Conference Papers

These are full papers that have been published in (or submitted to) fully peer-reviewed conference proceedings.

- Joseph A. Konstan, J.D. Walker, D. Christopher Brooks, and **Michael D. Ekstrand**. 2014. Teaching Recommender Systems at Large Scale: Evaluation and Lessons Learned from a Hybrid MOOC. To appear in *Proceedings of the First ACM Conference on Learning @ Scale*.
- Tien T. Nguyen, Daniel Kluver, Ting-Yu Wang, Pik-Mai Hui, **Michael D. Ekstrand**, Martijn C. Willemsen, and John Riedl. 2013. Rating Support Interfaces to Improve User Experience and Recommender Accuracy. In *Proceedings of the Seventh ACM Conference on Recommender Systems* (RecSys '13). ACM, New York, NY, USA. DOI=10.1145/2507157.2507188. Acceptance rate: 24

- Daniel Kluver, Tien T. Nguyen, **Michael Ekstrand**, Shilad Sen, and John Riedl. 2012. How Many Bits per Rating?. In *Proceedings of the Sixth ACM Conference on Recommender Systems* (RecSys '12). ACM, New York, NY, USA, 99-106. DOI=10.1145/2365952.2365974. Acceptance rate: 20.2

- Justin J. Levandoski, Mohamed Sarwat, Mohamed F. Mokbel, and **Michael D. Ekstrand**. 2012. RecStore: An Extensible And Adaptive Framework for Online Recommender Queries Inside the Database Engine. In *Proceedings of the 15th International Conference on Extending Database Technology* (EDBT '12). ACM, New York, NY, USA, 86-96. DOI=10.1145/2247596.2247608. Acceptance rate: 22.5

- **Michael D. Ekstrand**, Michael Ludwig, Joseph A. Konstan, and John T. Riedl. 2011. Rethinking The Recommender Research Ecosystem: Reproducibility, Openness, and LensKit. In *Proceedings of the Fifth ACM Conference on Recommender Systems* (RecSys '11). ACM, New York, NY, USA, 133-140. DOI=10.1145/2043932.2043958. Acceptance rate: 27.3

- Justin J. Levandoski, **Michael D. Ekstrand**, Michael J. Ludwig, Ahmad Eldawy, Mohamed F. Mokbel, John T. Riedl. 2011. RecBench: Benchmarks for Evaluating Performance of Recommender System Architectures *Proc. VLDB Endow.* 4, 11 (August 2011), 911–920. Acceptance rate: 18.1

- **Michael Ekstrand**, Wei Li, Tovi Grossman, Justin Matejka, and George Fitzmaurice. 2011. Searching for Software Learning Resources Using Application Context. In *Proceedings of the 24th Annual ACM Symposium on User Interface Software and Technology* (UIST '11). ACM, New York, NY, USA, 195-204. DOI=10.1145/2047196.2047220. Acceptance rate: 25

- **Michael D. Ekstrand**, Praveen Kannan, James A. Stemper, John T. Butler, Joseph A. Konstan, and John T. Riedl. 2010. Automatically Building Research Reading Lists. In *Proceedings of the Fourth ACM Conference on Recommender Systems* (RecSys '10). ACM, New York, NY, USA, 159-166. DOI=10.1145/1864708.1864740. Acceptance rate: 19

- **Michael D. Ekstrand** and John T. Riedl. 2009. rv you're dumb: Identifying Discarded Work in Wiki Article History. In *Proceedings of the 5th International Symposium on Wikis and Open Collaboration* (WikiSym '09). ACM, New York, NY, USA, 10 pages. DOI=10.1145/1641309.1641317. Acceptance rate: 36

Short Papers

These are short research papers published in conference proceedings. They are also peer-reviewed.

- **Michael Ekstrand** and John Riedl. 2012. When Recommenders Fail: Predicting Recommender Failure for Algorithm Selection and Combination. Short paper in *Proceedings of the Sixth ACM Conference on Recommender Systems* (RecSys '12). ACM, New York, NY, USA, 233-236. DOI=10.1145/2365952.2366002. Acceptance rate: 31.8

Other Publications

- **Michael D. Ekstrand**. 2014. Building Open-Source Tools for Reproducible Research and Education. To appear in *Sharing, Re-use and Circulation of Resources in Cooperative Scientific Work*, a workshop at CSCW 2014.

- **Michael D. Ekstrand**, Michael Ludwig, Jack Kolb, and John T. Riedl. 2011. LensKit: a modular recommender framework. Demo presented at the *Fifth ACM Conference on Recommender Systems* (RecSys '11). ACM, New York, NY, USA, 349-350. DOI=10.1145/2043932.2044001.

Software

I have built several open-source software packages in the course of my research and other work. These include:

- LensKit, a toolkit for building, researching, and studying recommender systems. `http://lenskit.grouplens.org`
- Grapht, a dependency injection framework for Java with novel configuration and static analysis capabilities. `http://github.com/grouplens/grapht`
- Goanna (now defunct), a graphical tool for visualizing InfiniBand networks and compute clusters. Written while at the Scalable Computing Laboratory.

Additional programs I have written can be found at `http://elehack.net/code/`.

Presentations and Talks

2012 'Flexible Recommender Experiments with LensKit' (invited talk) at the RecSys Challenge Workshop at RecSys '12 in Dublin, Ireland.

2012 'The MovieLens Data Set' (invited talk) at the RecSys Challenge Workshop at RecSys '12 in Dublin, Ireland.

2011 'Rethinking the Recommender Research Ecosystem: Reproducibility, Openness, and LensKit' (paper presentation) at RecSys '11 in Chicago, IL.

2011 'Searching for Software Learning Resources Using Application Context' (paper presentation) at UIST '11 in Santa Barbara, CA.

2010 'Automatically Building Research Reading Lists' (paper presentation) at RecSys '10 in Barcelona, Spain.

2009 'rv you're dumb: Identifying Discarded Work in Wiki Article History' (paper presentation) at WikiSym '10 in Orlando, FL.

Academic Service and Memberships

- Proceedings co-chair, CHI 2012 and 2013.
- Demos co-chair, RecSys 2012.
- Organizing committee member, *2nd Workshop on User-Centered Evaluation of Recommender Systems and Their Interfaces* (UCERSTI 2), RecSys 2011.
- Reviewer for several conferences and journals, including:
  - IEEE TDSC
  - *Symposium on Applied Computing*, Recommender Systems track
  - ACM TOIS (Transactions on Information Systems)
  - *J. Inf. Ret.*
  - *Advances in Artificial Intelligence*
  - ICWSM
  - *User Modeling*
  - ACM WikiSym
  - *Advances in Multimedia*
- ACM member.
- Secretary, Computer Science Graduate Student Association, University of Minnesota (2009–2010).