Marina Danilevsky

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Education

The University of Illinois at Urbana-Champaign, Urbana, IL
PhD candidate in Department of Computer Science (focus in data mining)
Advisor: Dr. Jiawei Han
MS in Department of Computer Science, August 2011   GPA 3.84/4.0
Selected coursework: Data Mining, Algorithms, Advanced Data Mining, Text
Information Systems, Machine Learning, Optimization, Probabilistic Graphical Modeling

The University of Chicago, Chicago, IL
BS in Mathematics, General Honors, Class of 2007   GPA: 3.5/4.0   GRE: 1490

New Trier Township High School, Winnetka, IL
                                   Class of 2003   Top 2% of class

Publications

- **Marina Danilevsky**, Chi Wang, Nihit Desai, Xiang Ren, Jingyi Guo, and Jiawei Han. "Automatic Construction and Ranking of Topical Keyphrases on Collections of Short Documents." *Proc. 2014 SIAM Int. Conf. on Data Mining (SDM'14)*, Philadelphia, PA, April 2014.

- Chi Wang, **Marina Danilevsky**, Jialu Liu, Nihit Desai, Heng Ji, and Jiawei Han. "Constructing Topical Hierarchies in Heterogeneous Information Networks." *Proc. 2013 IEEE Int. Conf.on Data Mining (ICDM'13),* Dallas, TX, Dec. 2013 *(selected as one of the best papers for possible publication in the journal "Knowledge and Information Systems".)*

- **Marina Danilevsky** and Eunyee Koh. "Information Graph Model and Application to Online Advertising." *Proc. 2013 ACM CIKM Workshop on User Engagement Optimization (UEO'13),* San Francisco, CA, Nov. 2013.

- Chi Wang, **Marina Danilevsky,** Nihit Desai, Yinan Zhang, Phuong Nguyen, Thrivikrama Taula, and Jiawei Han. "A Phrase Mining Framework for Recursive Construction of a Topical Hierarchy." *Proc. 2013 ACM SIGKDD Int. Conf. on Knowledge Discovery and Data Mining (KDD'13),* Chicago, IL, Aug. 2013.

- **Marina Danilevsky**, Chi Wang, Nihit Desai, and Jiawei Han. "Entity Role Discovery in Hierarchical Topical Communities." *Proc. 2013 ACM SIGKDD Int. Workshop on Mining Data Semantics in Heterogeneous Information Networks (MDS'13)*, Chicago, IL, Aug. 2013.

- Jialu Liu, Chi Wang, **Marina Danilevsky** and Jiawei Han. "Large-Scale Spectral Clustering on Graphs." *Proc. 2013 Int. Joint Conf. on Artificial Intelligence (IJCAI'13),* Beijing, China, Aug. 2013.

- Joshua Hailpern, **Marina Danilevsky**, Andrew Harris, Sunah Suh, Reed LaBotz and Karrie Karahalios. "ACES: A Cross-Discipline Platform and Method for Communication and Language Research." *Proc. 2013 ACM SIGCHI Conf. on Computer Supported Collaborative Work (CSCW'13),* San Antonio, Texas, USA, Feb. 2013.

- Cindy Xide Lin, Ming Ji, **Marina Danilevsky**, and Jiawei Han. "Efficient Mining of Correlated Sequential Patterns Based on Null Hypothesis." *Proc. of 2012 Int. Workshop on Web-Scale Knowledge Representation, Retrieval, and Reasoning (Web-KR 2012),* co-located with *2012 Int. Conf. on Information and Knowledge Management (CIKM'12),* Maui, Hawaii, Oct. 2012.

- Quanquan Gu, **Marina Danilevsky**, Zhenhui Li, and Jiawei Han. "Locality Preserving Feature Learning." *Proc. 2012 Int. Conf. on Artificial Intelligence and Statistics (AISTAT'12),* La Palma, Canary Islands, April 2012.

- Xide Lin, Qiaozhu Mei, JIawei Han, Yunliang Jiang, and **Marina Danilevsky**. "The Joint Inference of Topic Diffusion and Evolution in Social Communities." *Proc. 2011 IEEE Int. Conference on Data Mining (ICDM'11),* Vancouver, Canada, Dec. 2011.

- Joshua Hailpern, **Marina Danilevsky**, and Karrie Karahalios. "ACES: Aphasia Emulation, Realism, and the Turing Test." *Proc. 2011 Int. ACM SIGACCESS Conf. on Computers and Accessibility (ASSETS'11),* Dundee, Scotland, Oct. 2011.

- Ming Ji, Jiawei Han, and **Marina Danilevsky**. "Ranking-Based Classification of Heterogeneous Information Networks." *Proc. 2011 ACM SIGKDD Int. Conf. on Knowledge Discovery and Data Mining (KDD'11),* San Diego, Aug. 2011.

- **Marina Danilevsky**, Joshua Hailpern, and Jiawei Han. "SCENE: Structural Conversation Evolution Network." *Proc. 2011 International Conf. on Social Networks Analysis and Mining (ASONAM'11),* Kaohsiung, Taiwan, July 2011.

- Joshua Hailpern, **Marina Danilevsky**, Andrew Harris, Karrie Karahalios, Gary Dell, and Julie Hengst. "ACES: Promoting Empathy Towards Aphasia Through Language Distortion Emulation Software." *Proc. 2011 ACM CHI Conference on Human Factors in Computing Systems (CHI'11),* Vancouver BC, May 2011.

- Ming Ji, Yizhou Sun, **Marina Danilevsky**, Jiawei Han, and Jing Gao. "Graph Regularized Transductive Classification on Heterogeneous Information Networks." *Proc. 2010 European Conf. on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECMLPKDD'10),* Barcelona, Spain, Sept. 2010.

- Martin Campbell-Kelly, **Marina Danilevsky**, Daniel D. Garcia-Swartz, and Shane Pederson. "Clustering in the Creative Industries: Insights from the Origins of Software." *Industry and Innovation* vol. 17 no. 4, 2010.

- Howard H. Chang, **Marina Danilevsky**, David S. Evans, and Daniel D. Garcia-Swartz. "The Economics of Market Coordination for the pre-Fed Check-Clearing System: A Peek into the Bloomington (IL) Node." *Explorations in Economic History* vol. 45 no. 4, 2008.

Demos

- **Marina Danilevsky**, Chi Wang, Fangbo Tao, Son Nguyen, Gong Chen, Nihit Desai, and Jiawei Han. "AMETHYST: A System for Mining and Exploring Topical Hierarchies in Information Networks." *Proc. 2013 ACM SIGKDD Int. Conf. on Knowledge Discovery and Data Mining (KDD'13),* (system demo paper), Chicago, IL, Aug 2013.

- Timothy Weninger, **Marina Danilevsky**, Fabio Fumarola, Joshua Hailpern, Jiawei Han, Ming Ji, Thomas J. Johnston, Surya Kallumadi, Hyungsul Kim, Zhijin Li, David McCloskey, Yizhou Sun, Nathan E. TeGrotenhuis, Chi Wang, and Xiao Yu, "WinaCS: Construction and Analysis of Web-Based Computer Science Information Networks." *Proc. 2011 ACM SIGMOD Int. Conf. on Management of Data* (SIGMOD'11), (system demo paper), Athens, Greece, June 2011.

Professional Activities and Honors

Graduate Council, UIUC Department of Computer Science (2013-2014 school year)
National Science Foundation Graduate Research Fellowship (awarded 2011)
Graduate Student Member, UIUC Department of Computer Science Graduate Admissions Committee for Fall 2012 (Fall 2011 - Winter 2012)
Graduate Admissions Ambassador, UIUC Department of Computer Science (Spring 2013, Spring 2012, Spring 2011)
Grace Hopper Conference Travel Fellowship, UIUC Department of Computer Science (Fall 2011)
Graduate-Undergraduate Mentor (WCS) (Spring 2011)

Member of Women in Computer Science (WCS) (Spring 2010 - present)
  - **Graduate Representative of Women in Computer Science (WCS)** (Fall 2012 – Fall 2013)
Dean's List all quarters at University of Chicago (2003-2007)
Elected to Sigma Xi Associate Member (Spring 2006)
Undergraduate Microsoft scholarship (University of Chicago, awarded 2003-2004)

Teaching Experience

The University of Illinois at Urbana-Champaign, Urbana, IL
Teaching Assistant in the Department of Computer Science (Spring 2010, Fall 2010, Spring 2011)
– CS411 – Database Systems (SQL)
– Created all homework assignments, hold office hours, lead tutorial sessions, design and grade exam problems, communicate with students
– Lead TA for off-campus students (Spring 2011)

The University of Illinois at Urbana-Champaign, Urbana, IL
Teaching Assistant in the Department of Computer Science (Fall 2009)
– CS105 – Introduction to Computing with Application to Business and Commerce (VBA, SQL)
– Taught two lab sections, held office hours, designed homework assignments and exam problems.

University of Chicago, Chicago, IL
Teaching Assistant in the Department of Mathematics   (school year 04-05, 05-06, 06-07)
– Provided grades and detailed feedback on student assignments in various calculus and linear algebra classes
– Led tutorial sessions twice a week, providing a thorough supplement to class material (04-05).

Industry Experience

Adobe Labs, San Jose, CA
Research Intern – STL (Summer 2012)
– Constructed an algorithm to analyze and predict user behavior using real world data
– Wrote a publication and presented results to several internal teams, and the head of Adobe Labs.
– Successful experience has resulted in an ongoing collaboration between UIUC and Adobe Labs

Microsoft Online Services Division, Redmond, WA
Intern – Bing Data Mining Team (Summer 2010)
– Analyzed anonymized data logs for patterns and insight into behavior of users of Bing search engine, culminating with a report with recommendations and insights
– Gained familiarity with using a massive distributed database

LECG Inc., Chicago, IL
Research Analyst, Global Competition Group   (April 2007 – July 2009)
– Collected, organized and synthesized theoretical and empirical research, from sources such as academic papers, analyst reports, and databases.
– Constructed, managed, and analyzed data sets, making use of econometric techniques and various software (R, Stata, SAS, Excel).
– Wrote memos presenting research and analysis to co-workers, in preparation of larger documents.
– Researched, fact checked, performed relevant analysis, and otherwise contributed to expert reports in various industries (online advertising, telecommunications, pharmaceuticals), as well as papers published in peer-reviewed journals (*Industry and Innovation, Journal of Competition Law and Economics, Northwestern University Law Review, Review of Network Economics, and others).*

Siegel Data Management, Chicago, IL
Subcontractor   (2007 – 2009, occasional projects)

- Contributed to reverse engineering a large database for the National Association of Realtors by producing a complete ER analysis of the components and dependency relationships in the original structure so that the database could be rebuilt more robustly. Resulting database has been in place since spring of 2007 (Access, Excel)
- Performed an analysis of an existing database and recommended steps to take for better organization, robustness, and scalability for future development (MySQL Workbench)

Breakwater Trading, LLC, Chicago, IL
Intern- Research Assistant   (June-Sept 2006; June-Aug 2005)
- Created several components of an automated real-time trading model and produced reports analyzing the above model's performance over various time periods; facilitated the optimization of the model's parameters (Perl, Matlab)
- Researched CBOT market data in search of forecasting potential (S-Plus, MarketQAI, AlphaLogic)
- Programmed a trading simulation incorporating the results of the above research (S-Plus)
- Analyzed real-time market treasury data, calculated a trade model, and created a simulation to test the efficiency of the model in a trading environment (Excel, VBA)
- Optimized the allocation of funds to hold overnight positions, freeing $1MM in resources weekly (Excel, VBA)
- Produced code for a Kalman filter to be used for statistical analysis of market data (Excel, VBA)

Nuveen Investments, Chicago, IL
Intern- Customer Insights and Strategies   (June-August 2004)
- Developed multiple automated processes to query information from both internal and external databases and generate monthly, quarterly, and yearly reports and charts (Brio, Access with VBA and SQL, Excel)
- Collaborated with analysts to re-engineer several projects to increase efficiency in preparing reports for internal and external customers and enable more accurate and extensive data analysis (Brio, Access, Excel)
- Created several tools, such as a customized parser in Access, to assist Client Development group in future projects

Deerfield Capital Management, Chicago, IL
Intern- Trading desk and Systems   (June-August 2001-2003)
- Implemented business calendar planning/reminder project for individualized tracking of fund status (Perl, HTML)
- Developed MS Access database for legal department to more efficiently track employees' trading activities
- Contributed to development of company website and spreadsheet solutions for investors and counterparties (Adobe Photoshop, HTML, Excel)
- Responsible for daily positions and mark-to-market reports, as well as looking up market prices, relaying messages from counterparties, and running overnight fund reports (Excel)

MS Access Database for New Trier High School
(March-June 2003)
- At special request of school administration developed MS Access-based application for automated organizing of the marching order and seating arrangement of the graduating senior class of 900 students, to be used from 2003 onward

Skills and Interests

- Programming Languages (in decreasing order of fluency): Python, Perl, R, Matlab, Stata, SQL, C++, VB/VBA, Java, SAS, C#, HTML
- OS: Mac, Windows, Linux
- Spoken Languages: Fluent in English and Russian, conversational in Spanish
- Hobbies: Ultimate Frisbee, Fencing