

CURRICULUM VITAE

Hao MA

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BIOGRAPHY

I am currently a final year Ph.D candidate in The Chinese University of Hong Kong, majoring in Computer Science and Engineering and under the supervision of [Prof. Michael R. Lyu](#) and [Prof. Irwin King](#). I worked as a System Engineer at Intel Shanghai before joining CUHK. I worked as research intern in TMSN Group, Microsoft Research Redmond in summer 2008, and in ISRC Group, Microsoft Research Redmond in summer 2009.



EDUCATION

Nov. 2006 ~ Oct. 2009 (Expected)

Ph.D., Computer Science and Engineering, The Chinese University of Hong Kong, Hong Kong.

Sep. 2002 ~ Jun. 2005

M. Eng. in Computer Application Technology, Central South University, Changsha, P.R.China

Sep. 1998 ~ Jun. 2002

B. Eng. in Computer Science & Technology, Central South University, Changsha, P.R. China



RESEARCH INTERESTS

- ◆ Information Retrieval
- ◆ Data Mining
- ◆ Machine Learning
- ◆ Recommender Systems
- ◆ Social Network Analysis



WORK EXPERIENCE

- ◆ **May. 2009 ~ Aug. 2009**, Research Intern at Microsoft Research Redmond.
Mentors: Chao Liu and Yi-Min Wang.
The first project is to build a Micro-Vertical Search Engine for "Wish Upon A Hero (WUAH)" Web site. The second is to understand users' browsing and querying behaviors, and utilize their histories to model users' interests.
Development Tools: C#, ASP.NET, SQL
- ◆ **May. 2008 ~ Aug. 2008**, Research Intern at Microsoft Research Redmond.
Mentor: Raman Chandrasekar.
We designed and implemented three fun and valuable human computation games -- *Page Hunt*, *Page Race*

and *Page Match*. Our work provides an efficient and effective method to collect useful data for the research of Web search improvement, cognitive style analysis, eye-tracking analysis and search engine evaluation.

The Page Hunt game is also mentioned by:

- [MIT Technology Review](#), July 27, 2009
- [Search Engine Land](#), July 28, 2009
- [PC Magazine](#), July 28, 2009
- [eWeek](#), July 28, 2009

Demo Site: <http://pagehunt.msrlivelabs.com>.

Development Tools: C#, Silverlight, ASP.NET, SQL

- ◆ **Dec. 2005 ~ Nov. 2006**, System Engineer (Full-time Employee) at Intel Shanghai.
I proposed, designed and developed the Minidump Analyst System, awarded the Intel IT Division Recognition Award, 2007. The system is used to automatically collect and analyze the root cause of blue screens of each client with the co-operation with one colleague in US team. It is now deployed by the Intel global client engineering team in 80,000+ windows laptops and workstations. .
Development Tools: Windows Script in the client side, and SQL, VS.Net in the server side.
- ◆ **Sep. 2003 ~ Sep. 2004**, Intern at SANY Ltd. Co.
Project: "Intelligent Fault Diagnosis Expert System of Paver Based on Windows CE".
During this period, I took part in a National 863 Project. I was the main developer of the software "Intelligent Fault Diagnosis Expert System of Paver Based on Windows CE". This system is now running at thousands of road construction machines of SANY, like pavers. This system used many artificial intelligence methods, including fuzzy logic, and neural network.
Development Tools: Embedded Visual C++, and the platform is Windows CE.

PUBLICATIONS

Recent Publications:

- ◆ **Hao Ma**, Raman Chandrasekar, Chris Quirk and Abhishek Gupta. "Improving Search Engines Using Human Computation Games". In Proceedings of the 18th ACM Conference on Information and Knowledge Management (**CIKM 2009**), Hong Kong, November 2-6, 2009.
[Acceptance Rate: $123/847 = 14.5\%$]
- ◆ **Hao Ma**, Haixuan Yang, Irwin King and Michael R. Lyu. "Semi-Nonnegative Matrix Factorization with Global Statistical Consistency in Collaborative Filtering". In Proceedings of the 18th ACM Conference on Information and Knowledge Management (**CIKM 2009**), Hong Kong, November 2-6, 2009.
[Acceptance Rate: $123/847 = 14.5\%$]
- ◆ **Hao Ma**, Michael R. Lyu and Irwin King. "Learning to Recommend with Trust and Distrust Relationships". In Proceedings of the 3rd ACM Conference on Recommender Systems (**RecSys 2009**), New York City, NY, USA, October 22-25, 2009.
[Acceptance Rate: $24/140 = 17.1\%$]
- ◆ Tom Chao Zhou, **Hao Ma**, Irwin King, Michael R. Lyu. TagRec: "Leveraging Tagging Wisdom for Recommendation". In Proceedings of Symposium on Social Intelligence and Networking (**SIN 2009**), Vancouver, Canada, August 29-31, 2009.
[Acceptance Race: 20%]

- ◆ **Hao Ma**, Irwin King and Michael R. Lyu. "Learning to Recommend with Social Trust Ensemble". In Proceedings of the 32nd ACM Special Interest Group Conference on Information Retrieval (**SIGIR 2009**), Boston, USA, July 19-23, 2009.
[Acceptance Rate: $78/494 = 15.8\%$]
- ◆ **Hao Ma**, Raman Chandrasekar, Chris Quirk and Abhishek Gupta. "Page Hunt: Improving Search Engines Using Human Computation Games". In Proceedings of the 32nd ACM Special Interest Group Conference on Information Retrieval (**SIGIR 2009**), Boston, USA, July 19-23, 2009. (Poster)
[Acceptance Rate: $(78 + 26)/494 = 21.1\%$]
- ◆ Jiannong Cao, Lin Liao, Guojun Wang, **Hao Ma**, Bin Xiao. "A novel dual-key management protocol based on a hierarchical multicast infrastructure in mobile internet". International Journal of Ad Hoc and Ubiquitous Computing (**IJAHUC**), 4(3/4), 2009, pp: 183-190.
- ◆ Zibin Zheng, **Hao Ma**, Michael R. Lyu, Irwin King. "WSRec: A Collaborative Filtering based Web Service Recommender System". In Proceedings of the 7th IEEE International Conference on Web Services (**ICWS 2009**), Los Angeles, CA, USA, July 6-10, 2009.
[Acceptance Rate: $63/404 = 15.6\%$]
- ◆ **Hao Ma**, Haixuan Yang, Michael R. Lyu and Irwin King. "SoRec: Social Recommendation Using Probabilistic Matrix Factorization". In Proceedings of the 17th ACM Conference on Information and Knowledge Management (**CIKM 2008**), Napa Valley, California USA, October 26-30, 2008, pp: 931-940.
[Acceptance Rate: $131/772 = 17.0\%$]
- ◆ **Hao Ma**, Haixuan Yang, Irwin King and Michael R. Lyu. "Learning Latent Semantic Relations from Clickthrough Data for Query Suggestion". In Proceedings of the 17th ACM Conference on Information and Knowledge Management (**CIKM 2008**), Napa Valley, California USA, October 26-30, 2008, pp 709-718.
[Acceptance Rate: $131/772 = 17.0\%$]
- ◆ **Hao Ma**, Haixuan Yang, Michael R. Lyu and Irwin King. "Mining Social Networks Using Heat Diffusion Processes for Marketing Candidates Selection". In Proceedings of the 17th ACM Conference on Information and Knowledge Management (**CIKM 2008**), Napa Valley, California USA, October 26-30, 2008, pp 233-242.
[Acceptance Rate: $131/772 = 17.0\%$]
- ◆ **Hao Ma**, Irwin King and Michael R. Lyu. "Effective Missing Data Prediction for Collaborative Filtering". In Proceedings of the 30th ACM Special Interest Group Conference on Information Retrieval (**SIGIR 2007**), Amsterdam, Holland, 2007, pp: 39-46.
[Acceptance Rate: $86/491 = 17.5\%$]

Papers under Review:

- ◆ **Hao Ma**, Michael R. Lyu and Irwin King. "Mining Web Graphs for Recommendations".
- ◆ **Hao Ma**, Jacky Zhu, Michael R. Lyu and Irwin King. "Fusing the Semantic Gap between Image Contents and Tags".
- ◆ **Hao Ma**, Irwin King and Michael R. Lyu. "Diversifying Query Suggestion Results".
- ◆ **Hao Ma**, Michael R. Lyu and Irwin King. "Improving Recommender Systems by Incorporating Social

Contextual Information".

Publications before Year 2005:

- ◆ **Hao Ma**, Zhigang Hu, Guojun Wang. "A Reliable Routing Algorithm in Mobile Ad Hoc Networks Using Fuzzy Petri Net". In Proceedings of IEEE Global Communications Conference (**GLOBECOM 2004**) Workshop, Dallas, USA, Nov. 2004, pp: 80-84.
- ◆ **Hao Ma**, Zhigang Hu. "Research of Intelligent Fault Diagnosis System of Paver Based on Fuzzy Neural Network". In Proceedings of the Third China-Japan International Workshop on Internet Technology and Control Applications, Beijing, China, May. 2004, pp.119-123.
- ◆ Zhigang Hu, **Hao Ma**, Guojun Wang, Lin Liao. "RRA: A Reliable Routing Algorithm Based on Fuzzy Petri Net in MANET". Journal of Central South University of Technology, Vol.12, No.6, Dec. 2005, pp.714-719.
- ◆ Zhigang Hu, Rong Hu, **Hao Ma**. "A Route Reliability Algorithm for Mobile Ad Hoc Networks". In Proceedings of International Conference on Wireless Communications, Networking and Mobile Computing (**WCNM 2005**), Sept. 2005, pp.787-790.
- ◆ Zhigang Hu, Rong Hu, **Hao Ma**. "A reliable routing algorithm based on fuzzy applicability of F sets in MANET". In Proceedings of 11th Pacific Rim International Symposium on Dependable Computing (**PRDC 2005**), Dec.2005.
- ◆ Zhigang Hu, **Hao Ma**, Lin Liao. "Research on Fault Diagnosis Model Based on Fuzzy Neural Petri Nets" (in Chinese). Mini-Micro Systems, Vol.26, No.11, Nov.2005, pp.1978-1982.
- ◆ Guojun Wang, Lin Liao, **Hao Ma**. "A Survey on Key Management for Secure Multicast Communications in Mobile Internet" (in Chinese). Computer Applications, Vol.25, No.2, 2005, pp.377-381.



PROFESSIONAL ACTIVITIES

- ◆ **Program Committee**, IEEE WCNC 2010
- ◆ **Program Committee**, SWSM 2009, CIKM 2009 Workshop on Social Web Search and Mining
- ◆ **Program Committee**, IEEE GLOBECOM 2007
- ◆ **Program Committee**, IEEE ICC 2006
- ◆ **Program Committee**, Beijing-Hong Kong International Doctoral Forum 2007, 2009
- ◆ **Reviewers**: IJCAI 2009, WWW 2007-2009, CIKM 2008-2009, ACM Multimedia 2008, DSN 2008, etc.



TEACHING EXPERIENCE

- ◆ **Teaching Assistant**
Department of Computer Science and Engineering,
The Chinese University of Hong Kong
 - CSC1110, Introduction to Computing Using C

- CSC1130, Introduction to Computing Using Java
- CSC1500, Computer Principles and Programming
- CSC2100B, Data Structure
- CSC2100C, Data Structure
- CSC3100, Introduction to Software Engineering



PATENTS

- ◆ Using a Human Computation Game to Improve Search Engine Performance, USA, Pending



SELECTED AWARDS

- ◆ 2009, SIGIR 2009 Student Travel Grant.
 - ◆ 2008, CIKM 2008 Student Travel Grant.
 - ◆ 2007, SIGIR 2007 Student Travel Grant.
 - ◆ 2007, Intel IT Division Recognition Award.
 - ◆ Dec. 2004, the Best Paper Award in Annual Academic Conference of Information Science and Engineering.
 - ◆ Dec. 2004, the Best Research Output Award of School of Information Science and Engineering, CSU (Top 1).
 - ◆ Jul. 2002, the "Outstanding Graduate" Award.
 - ◆ Feb. 2002, the Successful Participant Prize of International Mathematical Contest in Modeling (USA).
 - ◆ Dec. 2001, the "Star of Technology" Award.
 - ◆ Nov. 2001, the Second Prize of China Undergraduates Mathematical Contest in Modeling.
 - ◆ Oct. 2001, the Second Prize of Hunan Province Undergraduates Mathematical Contest in Modeling.
 - ◆ Jun. 2001, the First Prize of Central South University Undergraduate Mathematical Contest in Modeling.
 - ◆ Dec. 2000, the "Advanced Individual of Extracurricular Technological Activities" Award.
 - ◆ Jun. 2000, the First Prize of Central South University Undergraduate Mathematical Contest in Modeling.
 - ◆ Dec. 1999, "Outstanding Student" Award.
 - ◆ Oct. 1999, the Third Prize of University Social Practice Report.
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