

Bee-Chung Chen

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EDUCATION

- University of Wisconsin – Madison** Dec. 2007
Ph.D. in Computer Sciences, Minor in Statistics (**GPA: 4.0**)
Dissertation: Cube-Space Data Mining
Advisor: Professor Raghu Ramakrishnan
Expected
- National Taiwan University**, Taipei, Taiwan Jun. 2000
M.S. in Computer Science and Information Engineering (**GPA: 4.0, Rank: 1/54**)
Thesis: Content-Based Image Retrieval of Butterflies
Advisor: Professor Jieh Hsiang
- National Taiwan University**, Taipei, Taiwan Jun. 1998
B.S. in Computer Science and Information Engineering (**GPA: 3.9, Rank: 1/45**)

HONORS AND AWARDS

- Outstanding Graduate Student Research Award**, CS, UW-Madison 2007
This award is given to one student in the department of Computer Sciences, UW-Madison each year to give recognition to excellence in research by the student.
- Microsoft Research Graduate Fellowship** 2006 – 2007
- Master Thesis Award of Inalways Foundation**, Taiwan 2000
- Presidential Award of National Taiwan University**, Taiwan 1995 – 1998
Seven times, the **best record** at National Taiwan University
This award is given each semester to students ranking within the top 5% of their class
- Pan Wen-Yuan Scholarship**, Taiwan 1997

RESEARCH EXPERIENCE

- Exploratory Data Analysis and Monitoring** 2004 – present
Research Assistant, University of Wisconsin – Madison
Under the supervision of Professor Raghu Ramakrishnan, I defined and investigated several novel data mining problems [6, 10] that combine predictive modeling and OLAP multidimensional exploration, which result in a promising research direction, cube-space data mining [11]. I was also involved in the design of an aggregation workflow framework [9], research on network coordinated attack data analysis [7] and research on atmospheric aerosol monitoring.
- Goal-Oriented Privacy Preservation** 2005 – present
Research Assistant, University of Wisconsin – Madison
Under the supervision of Professor Raghu Ramakrishnan, I investigated the tradeoff between data utility and privacy preservation in data publishing. Specifically, I defined and studied the problem of learning classification models from (privacy-preserved) SQL aggregate views [8], and proposed a novel framework that allows publishing organizations to investigate privacy threats and enforce privacy requirements in the presence of various types and amounts of adversaries' external knowledge [13].

Data Cleaning Summer 2005, Summer 2006
Intern, DMX Group, Microsoft Research

I worked with Dr. Surajit Chaudhuri, Dr. Venkatesh Ganti and Dr. Raghav Kaushik on example-driven design of record matching queries for data cleaning [12, P1, P2].

Fuzzy Logic-Based Knowledge Retrieval 2002 – 2003
Research Assistant, National Taiwan University, Taipei, Taiwan

Under the supervision of Professor Jieh Hsiang, I developed a novel knowledge retrieval framework and its fuzzy logic inference theory [5].

Content-Based Image Retrieval in Digital Libraries 1998 – 2000
Research Assistant, National Taiwan University, Taipei, Taiwan

Under the supervision of Professor Jieh Hsiang, I built a content-based image retrieval (CBIR) system for butterflies [1, 3, 4]. Because of the success of my methodology, in the following years, there were **five M.S.** and **one Ph.D.** studies based on my CBIR architecture in Professor Hsiang's research group.

WORK EXPERIENCE

University of Wisconsin – Madison 2004 – present
Research Assistant

Yahoo! Research, Santa Clara, CA Summer 2007
Intern

Microsoft Research, Redmond, WA Summer 2005, Summer 2006
Intern

University of Wisconsin – Madison 2003 – 2004
Teaching Assistant

National Taiwan University, Taipei, Taiwan 2002 – 2003
Research Assistant

Combat System Bureau, Headquarters of ROC Navy, Taiwan 2000 – 2002
Software Design Officer

EpicStream Inc, Taipei, Taiwan 2000
System Engineer

National Taiwan University, Taipei, Taiwan 1998-2000
Research Assistant, Teaching Assistant

PUBLICATIONS

- [13] Bee-Chung Chen, Kristen LeFevre and Raghu Ramakrishnan. **Privacy Skyline: Privacy with Multidimensional Adversarial Knowledge**. International Conference on Very Large Data Bases (VLDB), 2007. (16.9% acceptance)
- [12] Surajit Chaudhuri, Bee-Chung Chen, Venkatesh Ganti and Raghav Kaushik. **Example-Driven Design of Efficient Record Matching Queries**. International Conference on Very Large Data Bases (VLDB), 2007. (16.9% acceptance)
- [11] Raghu Ramakrishnan and Bee-Chung Chen. **Exploratory Mining in Cube Space**. Data Mining and Knowledge Discovery, 10th Anniversary Issue, 2007. (invited article)
- [10] Bee-Chung Chen, Raghu Ramakrishnan, Jude W. Shavlik and Pradeep Tamma. **Bellwether Analysis: Predicting Global Aggregates from Local Regions**. International Conference on Very Large Data Bases (VLDB), 2006. (13.2% acceptance)
- [9] Lei Chen, Raghu Ramakrishnan, Paul Barford, Bee-Chung Chen and Vinod Yegneswaran. **Composite Subset Measures**. International Conference on Very Large Data Bases (VLDB), 2006. (13.2% acceptance)
- [8] Bee-Chung Chen, Lei Chen, Raghu Ramakrishnan and David R. Musicant. **Learning from Aggregate Views**. IEEE International Conference of Data Engineering (ICDE), 2006. (19% acceptance)
- [7] Bee-Chung Chen, Vinod Yegneswaran, Paul Barford, Raghu Ramakrishnan. **Toward a Query Language for Network Attack Data**. IEEE International Workshop on Networking Meets Databases (NetDB), 2006.
- [6] Bee-Chung Chen, Lei Chen, Yi Lin and Raghu Ramakrishnan. **Prediction Cubes**. International Conference on Very Large Data Bases (VLDB), 2005. (16.4% acceptance)
- [5] Bee-Chung Chen and Jieh Hsiang. **A Model of Fuzzy Logic-based Knowledge Retrieval**. IEEE/WIC/ACM International Conference on Web Intelligence (WI), 2004.
- [4] Jieh Hsiang, Wen-Jun Liu, Bee-Chung Chen, Hsieh-Chang Tu. **Multidimensional Interactive Retrieval on Fine-grained Images**. IEEE International Conference on Multimedia & Expo (ICME), 2003.
- [3] Bee-Chung Chen and Jieh Hsiang. **Perception-Based Image Retrieval**, Technical Report NTUCSIE 02-04, National Taiwan University, 2002.
- [2] Bee-Chung Chen. **Intranet Data Access Control**, Journal of Communications, Electronics and Information, Ministry of National Defense, R.O.C. Taiwan, vol. 3, 2002. (Published in Chinese)
- [1] Bee-Chung Chen. **Content-Based Image Retrieval of Butterflies**, Master Thesis, Dept. of Computer Science and Information Engineering, National Taiwan University, 2000. (Published in Chinese)

PATENT FILED

- P2. Chaudhuri, Bee-Chung Chen, Venkatesh Ganti and Raghav Kaushik. **Example-Driven Design of Efficient Record Matching Queries**. US Patent Filed by Microsoft.
- P1. Bee-Chung Chen, Venkatesh Ganti and Raghav Kaushik. **Designing Record Matching Queries Utilizing Examples**. US Patent Filed by Microsoft.

PROFESSIONAL ACTIVITIES

Journal Reviewer

IEEE Transaction on Knowledge and Data Engineering

External Referee

SIGMOD 2006, EDBT 2006, ICDE 2005, VLDB 2004

COURSES TAKEN

Courses in Computer Sciences, University of Wisconsin – Madison:

CS564: Database Management Systems: Design and Implementation (taught by Raghu Ramakrishnan). Grade: A

CS764: Topics in Database Management Systems (taught by David DeWitt). Grade: A

CS784: Data Models and Languages (taught by Raghu Ramakrishnan). Grade: A

CS731: Advanced Methods in Artificial Intelligence (taught by David Page). Grade: A

CS760: Machine Learning (taught by Jude Shavlik). Grade: A

CS787: Advanced Algorithms (taught by Dieter van Melkebeek). Grade: A

CS776: Advanced Bioinformatics (taught by Thomas Anantharaman). Grade: A

Courses in Statistics, University of Wisconsin – Madison:

STAT609: Mathematical Statistics I (taught by Chunming Zhang). Grade: A

STAT610: Introduction to Statistical Inference (taught by Chunming Zhang). Grade: A

STAT761: Decision Trees for Multivariate Analysis (taught by Wei-Yin Loh). Grade: A

STAT849: Theory and Application of Regression and Analysis of Variance I (taught by Sunduz Keles). Grade: A