

# Adina Crainiceanu

## Assistant Professor

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## EDUCATION

- Ph.D. in Computer Science, Cornell University, Ithaca, NY May 2006  
Thesis Title: Answering Complex Queries in Peer-to-Peer Systems
- M.S. in Computer Science, Cornell University, Ithaca, NY January 2004
- M.S. in Computer Science, University of Bucharest, Bucharest, Romania July 1999
- B.S. in Computer Science. University of Bucharest, Bucharest, Romania July 1997

## EMPLOYMENT

**Assistant Professor, US Naval Academy, Annapolis, MD** December 2005-present

- Teach undergraduate courses in Computer Science: Database Management, Web and Internet Programming, Introduction to Computer Science, Object-Oriented Programming
- Perform research. My research interests lie at the intersection of databases and distributed systems, with a focus on finding information in dynamic, large, decentralized systems. In am also interested in data mining and computer science applications to life sciences.

**Research Assistant, Cornell University, Ithaca, NY** September 2001 – December 2005

- Investigated, created, and developed new methods and algorithms for answering complex queries in large, distributed, decentralized database systems.
- Implemented new algorithms, built, debugged and deployed a peer-to-peer system called Pepper on a network of more than 300 computers distributed throughout the world (Planet Lab). The code is written in C++ and has more than 60,000 lines.
- Designed experiments to test system performance.
- Collected test data, analyzed and interpreted results.

**Teaching Assistant, Cornell University, Ithaca, NY** Fall 2003

- Head Teaching Assistant for ComS 432 - Introduction to Database Systems and ComS 433 - Practicum in Database Systems.
- Coordinated the other teaching assistants: scheduled office hours, assigned grading and recitation duties, ensured that homework assignments are graded and returned on time, ensured that the questions posted by students online, on the class newsgroup, are answered within 24 hours.
- Created the assignments, posted the solutions.
- Graded homework assignments and exams.
- Held office hours and answered questions send by email or posted on the newsgroup.

**Research Intern, IBM Almaden Research Lab**, San Jose, CA Summer 2002

- Researched, designed and implemented an infrastructure allowing users to easily enhance their web content with dynamic capabilities. The infrastructure facilitates the development and deployment of new distributed applications. The infrastructure was immediately used to support critical aspects of the YouServ system, a web hosting system currently deployed within the IBM intranet and used by over 1400 users.

**Research Intern, Reliable Network Solutions**, Ithaca, NY Summer 2001

- Discussed with senior members of the team to determine application requirements.
- Designed and set up an SQL database to collect test data for Mariner/Astrolabe - software for distributed system monitoring, management and data mining.
- Devised and implemented tools to analyze the data and produce the reports.

**Research Assistant, Iowa State University**, Ames, IA Spring 2000

- Investigated algorithms for mining association rules from distributed databases.

**Programmer Analyst, Kepler**, Bucharest, Romania March 1996 – December 1999

- Analyzed, designed, implemented and tested large software products, as part of teams of 3 to 15 people. Some of the projects: maintenance and upgrade of banking software, migration of a huge warehouse management application from AS400 to client-server environment.
- Taught SQL language in a 1 day course organized by IBM in Romania.

**Programmer Analyst, Transiciel**, Lyon, France Summer 1998

- Developed part of the Advertising Module of a commercial application for large distribution companies (team of 4 people).

**Project Manager, Kepler**, Bucharest, Romania Summer 1997

- In charge of the management of a 4-month project with a team of 3 people.
- Assigned tasks and oversaw the members of the team.
- Discussed with the client and planned the project infrastructure.
- Ensured product compliance and timely delivery.
- Produced technical documentation for the project.

## **PROFESSIONAL ACTIVITIES**

- ACM Transactions on Database Systems (TODS) reviewer
- IEEE Transactions on Knowledge and Data Engineering (TKDE) reviewer
- Data and Knowledge Engineering (DKE) reviewer
  
- Upsilon Pi Epsilon International Honor Society for the Computing and Information Disciplines (UPE) member and USNA chapter faculty representative
- Association for Computing Machinery/Special Interest Group in Management of Data (ACM/SIGMOD) member

## REFEERED PUBLICATIONS

- **Load Balancing and Range Queries in P2P Systems Using P-Ring.** Adina Crainiceanu, Prakash Linga, Ashwin Machanavajjhala, Johannes Gehrke, and Jayavel Shanmugasundaram. ACM Transactions on Internet Technology (TOIT). 10, 4, Article 16, March 2011.
- **Bootstrap Bayesian Analysis with Applications to Gene-Environment Interaction.** Adina Crainiceanu, Kung-Yee Liang, Ciprian M. Crainiceanu: 24<sup>th</sup> International Symposium on Computer and Information Sciences (ISCIS 2009). Guzelyurt, Cyprus, 2009.
- **P-Ring: An Efficient and Robust P2P Range Index Structure.** Adina Crainiceanu, Prakash Linga, Ashwin Machanavajjhala, Johannes Gehrke, Jayavel Shanmugasundaram: ACM SIGMOD International Conference on Management of Data. Beijing, China, 2007.
- **Guaranteeing Correctness and Availability in P2P Range Indices.** Prakash Linga, Adina Crainiceanu, Johannes Gehrke, Jayavel Shanmugasundaram. ACM SIGMOD International Conference on Management of Data. Baltimore, 2005.
- **Querying Peer-to-Peer Networks Using P-Trees.** Adina Crainiceanu, Prakash Linga, Johannes Gehrke, and Jayavel Shanmugasundaram. International Workshop on the Web and Databases (WebDB). Paris, 2004.
- **An Indexing Framework for P2P Systems.** Adina Crainiceanu, Prakash Linga, Ashwin Machanavajjhala, Johannes Gehrke, Jayavel Shanmugasundaram. ACM SIGMOD International Conference on Management of Data. Paris, 2004. Demo.
- **P-Tree: A P2P Index for Resource Discovery Applications.** Adina Crainiceanu, Prakash Linga, Johannes Gehrke, and Jayavel Shanmugasundaram. World Wide Web Conference (WWW). New York, 2004. Poster paper.
- **A Storage and Indexing Framework for P2P Systems.** Adina Crainiceanu, Prakash Linga, Ashwin Machanavajjhala, Johannes Gehrke, and Jayavel Shanmugasundaram. World Wide Web Conference (WWW). New York, 2004. Poster paper.
- **Peer-to-Peer Sharing of Web Applications.** Roberto J. Bayardo, Adina Crainiceanu, Rakesh Agrawal. World Wide Web Conference (WWW). Budapest, 2003. Poster paper.

## TECHNICAL REPORTS

- **Answering Complex Queries in Peer-to-Peer Systems.** Adina Crainiceanu. Doctoral dissertation. May, 2006
- **P-Ring: An Index Structure for Peer-to-Peer Systems.** Adina Crainiceanu, Prakash Linga, Ashwin Machanavajjhala, Johannes Gehrke, Jayavel Shanmugasundaram. Cornell University Computing and Information Science Technical Report TR2004-1946, July 2004
- **Querying Peer-To-Peer Networks Using P-Trees.** Adina Crainiceanu, Prakash Linga, Johannes Gehrke, Jayavel Shanmugasundaram. Cornell University Computing and Information Science Technical Report TR2004-1926, 2004.
- **Peer-to-Peer Sharing of Web Applications.** Roberto J. Bayardo, Adina Costea, Rakesh Agrawal. IBM Research Report RJ 10268, Nov. 2002.