

# ABHIJEET MOHAPATRA

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## EDUCATION

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**Ph.D. Candidate**, Computer Science  
Stanford University, CA

**Bachelor of Technology**, Computer Science  
Indian Institute of Technology, Kharagpur, 2008  
GPA: 9.53 / 10.00

## RESEARCH AND WORK EXPERIENCE

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**Stanford University** 2010 - present  
*Graduate Student Researcher, Department of Computer Science*      *Advisor: Michael R. Genesereth*

Developed:

- *Merlin*, a system for automatically designing game visualizations from their description. Example of an automatically generated visualization for standard Tic-Tac-Toe: <http://stanford.edu/~abhijeet/trifecta/>.
- *Dexter*, a browser-based, domain-independent explorer of Web accessible (private or public) structured data for the everyday user. Prototype accessible at <http://dexter.stanford.edu>.
- A novel framework for expressing aggregates in Datalog, and algorithms to efficiently compute, update, integrate and visualize aggregated views over database tables.

**Microsoft Research, Redmond** Summers 2009 - 2010  
*Research Intern, Data Management and Exploration Group*      *Mentor: Ravishankar Ramamurthy*

- Proposed and implemented a mechanism to optimize fine-grained access control in database queries.
- Proposed and implemented an extensible framework to compress database relations by composing compression techniques.

**Cornell University** Summer 2007  
*Research Intern, Database Group*      *Mentor: Johannes Gehrke*

- Proposed a new architecture to enable parallel execution of the traditional game loop.
- Proposed a new algorithm to perform collision-free navigation in crowd simulations.

**IBM Research Lab, New Delhi** Summer 2006  
*Research Intern*      *Mentor: R. K. Shayamsundar*

- Developed a formal model to answer continuous queries on complex event streams in the temporal logic framework of Lustre.

## PATENTS

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*Indexing mechanism to optimally update compressed relations in column stores* (USPTO Publication Number: 20130097127)

*Indexing mechanism to efficiently enforce fine-grained access control* (USPTO Publication Number: 20120330925)

*Compressing database tables by leveraging optimal tuple ordering and composition of compression operators* (USPTO Publication Number: 20120150877)

## TEACHING

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*Introduction to Logic* (Coursera MOOC with ~ 80,000 sign-ups), Fall 2014

Position: Teaching Staff

*CS 157: Introduction to Logic*, Stanford University, Fall 2014

Position: Teaching Assistant

*CS 157: Computational Logic*, Stanford University, Fall 2010

Position: Teaching Assistant

## REFEREED PUBLICATIONS

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Mohapatra, A., Ramamurthy, R. and Kaushik, R.: *Raising Authorization Awareness in a DBMS*, Conference on Innovative Database Systems Research - 2015

Mohapatra, A., Agarwal, S. and Genesereth, M. R.: *Dexter: Plugging-n-Playing with Data Sources in Your Browser*, AAAI workshop on Semantic Cities - 2014

Mohapatra, A. and Genesereth, M. R.: *Incremental Maintenance of Aggregate Views*, Foundations of Information and Knowledge Systems - 2014

Mohapatra, A. and Genesereth, M. R.: *An Incremental Algorithm to Optimally Maintain Aggregate Views*, International Conference on Logic for Programming, Artificial Intelligence and Reasoning - 2013

Mohapatra, A. and Genesereth, M. R.: *Reformulating aggregate queries using views*, Symposium of Abstraction, Reformulation, and Approximation - 2013

Mohapatra, A. and Genesereth, M. R.: *Incrementally maintaining run-length encoded attributes in column stores*, International Database Engineering and Applications Symposium - 2012

## PRESENTATIONS

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*Automating the Design of Game Visualizations*

General Game Playing Competition, AAAI - 2015

*Plug and Play with Data Sources in your Browser with Dexter*

Stanford Computer Science Annual Affiliates Meeting - 2014

*Digital Department*

Stanford Computer Science Annual Affiliates Meeting - 2013

*Efficiently Updating Column Stores*

Stanford Computer Science Annual Affiliates Meeting - 2012

## AWARDS

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IIT Kharagpur *J.C. Ghosh Memorial Award* - 2007

IIT Kharagpur *Alumni (California Chapter) Award* 2006

IIT Kharagpur *Class of 1970 Alumni (US Association) Prize* 2006

Indian Academy of Sciences *Summer Fellowship* 2006