

# Daniel Gyllstrom

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- CONTACT INFORMATION**      Computer Networks Research Laboratory      mobile: +1.978.618.2316  
Department of Computer Science      e-mail: dpg@cs.umass.edu  
University of Massachusetts Amherst, USA      <http://www.cs.umass.edu/~dpg/>
- EDUCATION**      **M.S./Ph.D., Computer Science**      *(September 2005 – present)*  
*University of Massachusetts, Amherst, MA USA*  
• Expected graduation date: Fall 2011  
• PhD Advisor: Jim Kurose  
• M.S. awarded December 2007  
• MS Thesis Advisors: Yanlei Diao and Neil Immerman
- B.S., Computer Science**      *(September 2000 – May 2004)*  
*Trinity College, Hartford, CT USA*  
• Cumulative GPA: 3.84/4.0, Class Rank: 22 of 493  
• Phi Beta Kappa, Honors in General Scholarship, Honors in Computer Science
- SELECTED PUBLICATIONS**      D. Gyllstrom, S. Vasudevan, J. Kurose and G. Miklau. “Efficient Recovery from False State in Distributed Routing Algorithms”, *International IFIP TC 6 Networking Conference (NETWORKING)*, pp. 198-212, 2010.
- J. Agrawal, D. Gyllstrom, Y. Diao, and N. Immerman. “Efficient Pattern Matching over Event Streams”, SIGMOD 2008.
- D. Gyllstrom, J. Agrawal, Y. Diao, and N. Immerman, “On Supporting Kleene Closure over Event Streams”, ICDE 2008.
- D. Gyllstrom, E. Wu, H.J. Chae, Y. Diao, P. Stahlberg, and G. Anderson. “SASE: Complex Event Processing over Streams”, In Proceedings of the Third Biennial Conference on Innovative Data Systems Research (CIDR 2007) , Asilomar, CA, January 2007. Demo proposal.
- RESEARCH EXPERIENCE**      **Computer Networks Research Group, UMass**      *(Summer 2008 - present)*  
*Research Assistant, Advisor: Professor Jim Kurose*  
• Smart Grids Project: Studying synchrophasor sensors, which measure voltage and current along transmission lines and at electric substations. Formulating new problems for sensor placement in which sensors are placed near each other in order to cross-validate sensor measurements.  
• False Routing State Project: Investigated how to recover from scenarios where false routing state is injected and has spread throughout a network of routers (e.g., by misconfigured or compromised routers). Designed, implemented, and evaluated recovery algorithms using simulation and analysis.
- Database and Information Management Lab, UMass.**      *(Spring 2006 - Spring 2007)*  
*Research Assistant, Advisor: Professor Yanlei Diao*  
• Developed new algorithms and implementation for the SASE stream processing engine (15K+ lines of code) to evaluate continuous queries in real-time.  
• Built simulator from scratch and evaluated algorithms using real RFID stream data and stock ticker data.  
• Built working prototype of SASE that collects, cleans, and processes raw RFID data to support real-time queries. Demonstrated prototype at CIDR 2007 in a simulated retail store environment.
- Laboratory for Advanced Software Engineering Research, UMass.**      *(Fall 2005)*  
*Research Assistant, Advisor: Professor Leon Osterweil*  
• Worked to define dispute resolution processes for digital government systems using the Little-Jil process language.  
• Evaluated our process-driven approach in the domain of dispute resolution. Work done in cooperation with the National Mediation Board
- PROFESSIONAL EXPERIENCE**      **IBM - Software Engineer.** Westborough, MA USA.      *(June 2004 - Aug. 2005)*  
• Worked on Websphere Metadata Server (WMS).  
• Designed and implemented framework to enforce insert, delete, and update semantics for WMS.  
• Developed command line tool for generating database schemas and object relational mapping files from custom Eclipse Modeling Framework meta-models.

- Added functionality to Metadata Explorer GUI (a tool used by developers and QA) implemented as an Eclipse plug-in. In charge of internal releases Metadata Explorer.

**IBM - Intern.** Westborough, MA USA. *(Summer 2007)*

- Worked on Websphere Metadata Server.
- Developed Java code to implement pagination algorithm (e.g., determine how many database rows to return to the client with each query), in charge of merging code branches, fixed and verified bugs.

**Sun Microsystems - Intern.** Marlborough, MA USA. *(Summer 2003)*

- Worked on Enterprise Storage Manager (ESM).
- Developed Java code for a command line interface, resource bundles for internationalization, verified various bug fixes, and tested the different releases of ESM.

TEACHING  
EXPERIENCE

**Department of Computer Science, UMass** *(Spring 2008)*

*Teaching Assistant* - Database Design and Implementation.

- Instructor: Professor Jerome Miklau.
- Conducted weekly TA sessions, graded homeworks and exams, maintained course website, and helped create homework assignments.

**Department of Computer Science, UMass** *(Fall 2007)*

*Teaching Assistant* - Intro to Problem Solving with Computers.

- Instructor: Professor Robert Moll.
- Conducted weekly lecture, helped design course lectures, held weekly TA sessions, and graded exams.

**Department of Computer Science, UMass** *(Spring 2006)*

*Teaching Assistant* - Intro to Computation.

- Instructor: Professor David A. Mix Barrington.
- Conducted weekly TA sessions, created homework solution sets, graded homeworks and exams.

**Department of Computer Science, Trinity College** *(Fall 2001 and Fall 2003)*

*Teaching Assistant* - Intro to Computing (Java)

- Instructor: Professor Takunari Miyazaki (2001) and Professor Madalene Spezialetti (2003).
- Graded homeworks and programming assignments, weekly office hours, lead extra help session lectures, and lead a weekly lab session.

**Department of Computer Science, Trinity College** *(Spring 2002)*

*Teaching Assistant* - Database Structures and Algorithms.

- Instructor: Professor Madalene Spezialetti.
- Graded homeworks and programming assignments, weekly office hours, lead extra help session lectures, and lead a weekly lab session.

SKILLS AND TOOLS  
EXPERIENCE

- Programming: Java, Python, UML, JavaScript, FORTRAN, SQL, MIPS Assembly, E-Prime, Mathematica, ML, and Eclipse Modeling Framework.
- Tools: Forte, Accurev, Eclipse, CVS, Codewarrior, SPIM, Unix, MS Office, Clear Case, Rational XDE, Maven, Subversion, Java Cup, DB2, and MySQL.
- Language: Fluent in spoken Swedish and near fluent in reading and writing Swedish

ACADEMIC  
AWARDS  
AND HONORS

- Phi Beta Kappa
- Honors in General Scholarship
- Honors in Computer Science Major
- ECAC Scholar Athlete Award given to best senior student athlete (2004)
- Bob Harron Award given to best junior student athlete (2003)
- NESCAC All-Academic Team (2002, 2003, 2004)
- Faculty's Honors 7/8 semesters
- Third Place in the Phi Beta Gamma Prize in First Year Mathematics

ATHLETIC AWARDS  
AND  
ACHIEVEMENTS

- Elected Team Captain of Trinity College Varsity Ice Hockey Team (2003-2004)
- Member of Trinity College Men's Varsity Ice Hockey Team (2000-2004)
- Reach the Beach Relay (2003-2005,2008), Boston Marathon (2001)
- Member Boston Junior Bruins (1999-2000)

ACADEMIC  
SERVICE

- *Graduate student representative* from Fall 2009-Fall 2010. Served as interface between CS graduate students and CS faculty. Attended faculty meetings, mentored struggling students, raised graduate student complaints to CS faculty, and organized graduate student events.
- Member of Social Committee at the Department of Computer Science at UMass. In charge of organizing social events and notifying students of these events.
- Volunteered to be on a graduate student panel at Mount Holyoke College to encourage undergraduate students to pursue graduate school and careers in research.