

EDMOND LAU

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EDUCATION

- June 2006 **Massachusetts Institute of Technology**, Cambridge, MA **GPA 5.0/5.0**
Master of Engineering in Electrical Engineering and Computer Science.
Thesis: *An Integrated Approach to Recovery and High Availability in an Updatable, Distributed Data Warehouse*
Supervisor: Professor Samuel Madden
- June 2005 **Massachusetts Institute of Technology**, Cambridge, MA **GPA 5.0/5.0**
Bachelor of Science in Computer Science and Engineering.
Concentrations in Political Science and Economics.
- Relevant Coursework:* Software Engineering in Web Applications; Distributed Computer Systems; Operating Systems; Database Systems; Techniques in Artificial Intelligence; Probabilistic Systems Analysis; Lightweight Formal Methods; Computer and Network Security; Computation Structures; Theory of Computation

WORK/RESEARCH

EXPERIENCE

- August 2010 – Present **Quora** Mountain View, CA
Software Engineer: Working on the growth team. Built various product features, recommendation systems, and web infrastructure components. Led the development of onboarding sessions, codelabs, and mentoring practices for new engineers.
- June 2008 – July 2010 **Ooyala – Analytics and Monetization Team** Mountain View, CA
Staff Software Engineer and Tech Lead: Led a team of four engineers. Designed and implemented the analytics pipeline, including the client-side analytics module, the MapReduce processors, the Cassandra/MySQL-based data storage, and the analytics query servers. Analyzed logs and built dashboards to track CDN performance, ad metrics, and player errors. Increased engineering productivity by building a Ruby-based Hadoop MapReduce infrastructure, a command-line build system for Flex/Actionscript, Thrift compiler and library bindings for Actionscript RPCs, and a remote debug console for the player. Played a key role in the design, implementation, and launch of Ooyala's player and Actionable Analytics product.
- August 2006 – June 2008 **Google Inc. – Web Search Quality** Mountain View, CA
Software Engineer: Launched related searches on google.com web search along with two other engineers. Played a key role in the generation and evaluation of related searches, in the experimentation and subsequent analysis, in the UI design, and in the internationalization to other languages. Shared responsibility in managing the production service and in optimizing server performance. Conducted and analyzed multiple UI experiments on google.com.
- September 2004 – June 2006 **MIT CSAIL (Computer Science and AI Laboratory) – Database Group** Cambridge, MA
Research Assistant for Professors Michael Stonebraker & Samuel Madden: Prototyped C++ implementation of column-oriented DBMS called C-Store; prototype outperformed commercial DBMSs by 10x - 100x on read query benchmarks. Co-authored 2005 Very Large Data Bases (VLDB) conference paper on C-Store architecture. Designed, implemented, and evaluated fast crash recovery algorithms and high availability frameworks for Master's thesis. Authored 2006 VLDB conference paper on thesis work.
- June – August 2005 **Google Inc. – Orkut Team** Mountain View, CA
Engineering Intern: Designed and implemented the backend search server infrastructure (in C++), the frontend application logic (in C#, ASP.NET), and the user interface (in HTML, Javascript) for advanced search and full-text search on orkut.com, a social networking site with 10 million users. Conducted performance and load tests for quality assurance. Headed design discussions with other team members and prepared design documents.
- February 2003 – January 2005 **MIT CSAIL (Computer Science and AI Laboratory) – Software Design Group** Cambridge, MA
Research Assistant for Professor Daniel Jackson: Formulated and analyzed structural micromodels of software protocols with Alloy model analyzer to detect design flaws and errors. Conducted case study of Common Profile for Presence protocol. Implemented software module in Java to support polymorphism in Alloy modeling language. Engineered tool for visually debugging overconstrained models using SAT solvers' unsatisfiable core technology.
- May – August 2004 **Microsoft Corporation – Windows CE Multimedia Team** Redmond, WA
Software Design Engineer Intern: Designed and developed a command-line performance analysis tool called ASFPef that uses DirectShow filters to measure and report decode times for audio/video frames in Windows Media files. Authored ASFPef technical spec and worked with Windows Media codec APIs and with Windows CE kernel debugger. Visualized codec performance data using VBScript. Presented tool at team meetings and code reviews.

September –
December 2003 **MIT Libraries – DSpace Federation** Cambridge, MA
Program Manager and Software Developer: Developed an open source, database-backed online learning community in PHP and PostgreSQL to support collaboration of over 100 institutions evaluating the DSpace digital library system. Headed weekly presentations and demos with client contact. Authored technical specifications, functional descriptions, and design proposals.

June –
August 2003 **MIT Lincoln Laboratory – Decision Superiority Systems Group** Lexington, MA
Software Engineering Intern: Conceived the group's first software prototype for a real-time, space-based sensor data exploitation and machine learning system. Built probabilistic models, feature extraction algorithms, pattern classifier, neural network backend, and graphical user interface of system using Java, C++, and MATLAB.

January 2003 **The Plum Group** Boston, MA
Software Development Intern: Created email to phone gateway in PHP that accepted email with executable VoiceXML message body and played message content as voice message to phone number specified in email.

TEACHING EXPERIENCE

January –
May 2005 **MIT EECS Department – Robotics Systems and Science Laboratory** Cambridge, MA
Lab Assistant: Assisted instructors in refining coursework for new pilot robotics class. Conducted lab sessions to guide class of 24 students through lab assignments and robotics software issues.

February –
April 2003 **MIT EECS Department – Software Engineering Laboratory** Cambridge, MA
Lab Assistant: Composed Java tutorials and conducted weekly lab sessions to help class of 163 students learn to effectively utilize Java language and tools. Aided students in solving and debugging problem sets.

June –
July 2002 **Monica Learning Center** San Francisco, CA
SAT and PSAT Teacher: Designed the entire lesson plan for summer SAT and PSAT preparation sessions. Instructed two 15-student classes in verbal test-taking strategies and in test material.

September –
November 2001 **MIT Educational Studies Program** Cambridge, MA
Teacher for SATP (SAT Preparation) Program: Instructed 20 high school students from low-income families in the Boston area on test-taking skills and on SAT I material.

LEADERSHIP ACTIVITIES

President of Eta Kappa Nu EECS Honor Society, 2004 – 2005.
Editor-in-Chief of HKN's *Underground Guide to Course VI* (publication of 70+ EECS class reviews), 2003 – 2004.
Tau Beta Pi Engineering Honor Society, 2003 – Present.
MIT Parliamentary Debate Team, 2001 – 2002.

OUTSTANDING DISTINCTIONS

Chorafas Foundation Award for Master of Engineering thesis, 2006.
Siebel Scholar Fellowship Award, 2006.
MIT School of Engineering Henry Ford II Scholar Award for "highest academic record and exceptional potential for leadership in the profession of engineering and in society," 2005.
Best Engineering Design Award for Mobile Autonomous System Lab Robotics Competition, 2004.
Commendation letters from professors for outstanding academic performance in Software Engineering Laboratory, Circuits and Electronics, and Differential Equations courses, 2001 – 2002.
National Forensic League Degree of Outstanding Distinction, 2001.

TECHNICAL PROFICIENCIES

Operating Systems: Linux, Mac OS X
Programming: Ruby/Rails, Python, C++, Java, Actionscript/Flex, Javascript, C, C#, PHP, Perl, MATLAB, Scheme
Systems/Tools: Hadoop MapReduce, Cassandra, MySQL, Thrift, Emacs, Git, SVN, make, ant, Eclipse
Foreign Languages: conversational ability in Chinese, reading ability in Spanish

INTERESTS

Debating, writing, skiing, snowboarding, ice skating, tennis, ping pong, foosball.
Building practical tools and applications that people can use.