

# Mark Liu

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<http://markliu.me>

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## Education

- 2009–present **MS, Environmental Studies**, *University of Wisconsin - Madison*, Madison, WI.  
status: In Progress. Expected Graduation in May 2011
- 2007–2009 **MS, Computer Science**, *University of Wisconsin - Madison*, Madison, WI.  
advisor: Professor Eric Bach
- 2003–2007 **BS, Computer Science and Engineering**, *UCLA*, Los Angeles, CA.  
gpa: 3.76/4.0  
honors: Cum Laude

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## Experience

- 2009–2010 **Research Assistant**, *University of Wisconsin - Madison*, Madison, WI.  
Conducted research in remote sensing under Professor Mutlu Ozdogan with the assistance of Professor Jerry Zhu within the Centre for Sustainability and the Global Environment (SAGE). Worked on developing new statistical classification algorithms to utilize satellite images of varying spatial and temporal resolutions concurrently.
- summer 2009 **Intern**, *India Institute of Science*, Bangalore, India.  
Worked at the Center for Sustainable Technologies primarily assisting other graduate students with various water quality projects. Traveled to villages 1-2 hours outside Bangalore to perform water quality analysis. Learned standard techniques for analyzing water samples and performing on site assessments.
- 2008–2009 **Project Manager**, *Engineers Without Borders*, Orongo, Kenya and Madison, WI.  
Led a group of 40 students in the UW-Madison Kenya water quality project. Traveled to Kenya three times for three weeks each time. Managed finances, funding, and logistics both in Madison and in Kenya. Wrote the reports, documented our project, and presented our work at various venues.
- 2008–present **Webmaster**, *Engineers Without Borders*, Madison, WI.  
Created a website from scratch (<http://www.ewbuw.org>) using the Drupal CMS. Used PHP, HTML, CSS, and MySQL to create dynamic pages that allow officers to update content quickly and easily.
- 2007–2009 **Teaching Assistant**, *University of Wisconsin - Madison*, Madison, WI.  
Was a teaching assistant for courses titled “Foundations of Scientific Computing”, “Machine Organization and Basic Systems”, and “Introduction to Algorithms.” Held weekly review sessions and office hours. Gave lectures while the instructors are out of town. Wrote and graded assignments. Proctored and graded exams.
- 2006–2007 **Undergraduate Research Assistant**, *UCLA*, Los Angeles, CA.  
Worked for Professor Miodrag Potkonjak on hardware authentication problems. Wrote a complex C++ program using linear programming to solve whether or not a digital logic circuit contains unwanted circuitry inserted by an 'attacker'.

- 2005–2007 **Webmaster**, *Tau Beta Pi*, UCLA, Los Angeles, CA.  
Set up a LAMP (Linux, Apache, MySQL, PHP) server and created the website <http://tbp.seas.ucla.edu> using the Dragonfly CMS. Used PHP, MySQL, JavaScript, and HTML to write custom pages for logged in users to contribute content. Created a searchable, password protected collection of past examinations. Trained future webmasters.
- 2005–2007 **Webmaster**, *Smaug*, Los Angeles, CA.  
Helped build and maintain a website for UCLA's Ultimate Frisbee team (<http://www.smaugultimate.com>). Created a PHP program to take human readable text output from a palm pilot statistics program and parse it to enter the relevant information into a MySQL database. Created dynamic pages for users to view team results and statistics.
- 2005–2007 **Lab Assistant**, *Automated Reasoning Group*, UCLA, Los Angeles, CA.  
Assisted in the development of a Java based Bayesian Network tool called Samiam (<http://reasoning.cs.ucla.edu/samiam/>). Managed the server and website. Set up an additional website for privileged users for bug tracking and usage statistics. Assisted graduate students by writing testing scripts in Perl.
- summer 2001, 2003, 2004 **Intern**, *PACE Systems*, Naperville, IL.  
Configured and assembled large numbers of PCs and servers as specified by high volume clients. Worked on customer service helping physicians of Illinois obtain and set up high speed internet. Helped maintain a staffing service website along with significant paperwork and data entry.

## Technical Experience

### Extremely Proficient With

- languages C, C++, Python, PHP, JavaScript, Matlab, HTML, CSS
- technologies Windows, Ubuntu & Red Hat Linux, OSX, Django, Drupal CMS, MySQL, SQLite,  $\text{\LaTeX}$ , Bash Scripting, ENVI, Visual Studio, Eclipse, Vim

### Have Experience With

- languages Java, Objective C, Fortran, Perl, Scheme, OCaml, ML, Lisp, Prolog, VHDL, IDL
- technologies Apache, DB2, JQuery, JSON, Joomla CMS, Dragonfly CMS, Emacs

## Relevant Coursework

### University of California, Los Angeles

- computer science Programming in C++, Digital Design, VHDL, CAD tools, Machine Language (MIPS), Computer Network Fundamentals, Physical Layer of Computer Networks, Programming Languages, Computer Architecture, Algorithms, Complexity Theory, Databases, Operating Systems, Digital Graphics
- electrical engineering Electromagnetics, Semiconductors, Systems and Signals, Circuit Analysis

### University of Wisconsin, Madison

- computer science Quantum Computing, Arithmetic Algorithms, Advanced Complexity Theory, Harmonic Analysis of Boolean Functions, Computational Cognitive Science, Bioinformatics, Combinatorics, Artificial Intelligence, Advanced Databases

remote sensing   Environmental Remote Sensing, Digital Image Processing

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## Honors

honor societies   Tau Beta Pi, Eta Kappa Nu, Golden Key, Upsilon Pi Epsilon  
dean's list   2 semesters at UCLA  
fellowships   Offered Southern California's Provost Ph.D. Fellowship in Electrical Engineering

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## Activities

2004–2007   **Ultimate Frisbee Club Team**, *UCLA*, Los Angeles, CA.  
Practiced four times a week and traveled across the western united states for between 10 and 12 tournaments each year.

2007–present   **Ultimate Frisbee Club Teams**, *UW-Madison*, Madison, WI.  
Practiced and traveled with three Madison based ultimate frisbee club teams. Played in numerous recreational leagues.

2007–present   **Engineers Without Borders**, *UW-Madison*, Madison, WI and Orongo, Kenya.  
Began a long term irrigation system project to allow the members of Orongo to grow more profitable crops. Started an income generating agroforestry project at a Kenyan Primary School. Built and tested prototype biosand filters in both Kenya and Madison. Built and tested prototype low cost solar cookers in both Kenya and Madison.

**Other Current Hobbies.**  
Web Programming, Camping, Hiking, Backpacking, Traveling, Road Trips, Basketball, Piano