

DIANE HU

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RESEARCH INTERESTS

Probabilistic models for music, images, and text, with applications for content-based media annotation/retrieval.

EDUCATION

University of California, San Diego, La Jolla, CA 2006–Present
Ph.D. Student in Computer Science Advisor: Lawrence Saul

University of California, San Diego, La Jolla, CA 2006–2009
M.S. in Computer Science Advisor: Lawrence Saul

University of Washington, Seattle, WA 2002 – 2006
B.S. in Computer Science, Minor in Music, Cum Laude Advisor: Linda Shapiro

SELECTED PUBLICATIONS & REPORTS

D. J. Hu, L. Bo, X. Ren, “A joint framework for material and object recognition,” *British Machine Vision Conference (BMVC)*, Dundee, Scotland, 2011.

D. J. Hu, L.P. van der Maaten, Y. Cho, L. K. Saul, S. Lerner, “Latent variable models for predicting file dependencies in large-scale software development,” *Neural Information Processing Systems (NIPS)*, Vancouver, Canada, 2010.

D. J. Hu, L. K. Saul, “A topic model for audio and symbolic music analysis,” *Neural Information Processing Systems (NIPS) Workshop on Topic Modeling*, Whistler, Canada, 2009.

D. J. Hu, “Latent Dirichlet allocation for images, text, and music,” *UCSD CSE Department Qualifying Exam*, 2009.

D. J. Hu, L. K. Saul, “A probabilistic topic model for unsupervised learning of musical key-profiles,” *International Conference on Music Information Retrieval (ISMIR)*, Kobe, Japan, 2009.

C. Cheng, D. J. Hu, L. K. Saul, “Nonnegative matrix factorization for real-time musical analysis and sight-reading evaluation,” *International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Las Vegas, NV, 2008

RESEARCH & INDUSTRY EXPERIENCE

Research Intern | Yahoo! Labs, Sunnyvale, CA | Advisor: Sudarshan Lamkhede Summer 2011
Worked with Yahoo’s user search data (containing upwards of multi-millions of examples per dataset) to work on algorithms that would trigger consistent news and movie direct displays (DDs) on search result page for all search queries with similar purpose/intent. Work done with the Search Sciences team.

Research Intern | Intel Labs, Seattle, WA | Advisor: Xiaofeng Ren Summer 2010
Automatically classify everyday household objects into material categories (i.e. wood, plastic, glass, etc.) in image collections (using computer vision) and physical object datasets (using a multi-sensor approach with macro lenses, RGB-D cameras, audio recordings, and weight/volume data).

Software Developer Intern | Teranode Corp., Seattle, WA | Advisor: Kuang Chen Summer 2006
Implemented, tested, and documented a new framework for the Teranode XDA Platform SDK in Java that allows users to load self-developed plug-ins into Teranode XDA software. Also worked with the Teranode consulting team to develop several plug-ins on top of Teranode Core for client Pfizer Inc.

TEACHING EXPERIENCE

- CSE 3 Teaching Assistant** | UC San Diego, *La Jolla, CA* | *Advisor: Susan Marx* Fall 2011
Undergraduate non-engineering course on information technology, covering HTML, word processing, and basic programming logic. Responsibilities include leading weekly lab tutorials and lab help hours.
- CSE 21 Teaching Assistant** | UC San Diego, *La Jolla, CA* | *Advisor: Ron Graham* Fall 2011
Undergraduate discrete math course, covering enumeration and counting techniques, recurrence relations, graph theory, applied discrete probability, etc. Responsibilities include grading and holding weekly office hours.
- CSE 11 Teaching Assistant** | UC San Diego, *La Jolla, CA* | *Advisor: Paul Kube* Spring 2011
Undergraduate introductory programming course in Java, covering basic programming concepts and frameworks. Responsibilities include leading weekly discussion sections, holding hands-on lab hours, and grading.
- CSE 103 Teaching Assistant** | UC San Diego, *La Jolla, CA* | *Advisor: Sanjoy Dasgupta* Fall 2010
Undergraduate probability and statistics course, covering basic probability, randomized algorithms, stochastic processes, statistical hypothesis testing, and basic machine learning. Responsibilities include leading weekly discussion sections, grading, writing detailed homework solutions, and holding office hours.
- CSE 150 Teaching Assistant** | UC San Diego, *La Jolla, CA* | *Advisor: Lawrence Saul* Winter 2011
Undergraduate machine learning course that covers topics like graphical models, learning and inference in Bayesian networks, prediction and planning in Markov decision processes. Responsibilities include holding weekly discussion sections and office hours.

SKILLS

Relevant Coursework: Statistical Machine Learning, Statistical Natural Language Processing, Computer Vision
Technical Skills: Matlab, Perl, Java, Cocoa/Objective C, Hadoop, C/C++, HTML/CSS

HONORS

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| National Science Foundation (NSF) Graduate Research Fellowship | 2007 – 2010 |
| Google Anita Borg Memorial Scholarship Finalist | 2007 – 2008 |
| UCSD Powell Foundation Junior Ph.D. Student Research Fellowship | 2006 – 2007 |
| Mary Gates Endowment Undergraduate Research Scholarship | 2004 – 2006 |
| Microsoft Scholarship | 2004 – 2005 |
| Washington NASA Space Grant Scholarship | 2002 – 2006 |
| University of Washington Undergraduate Scholarship | 2002 – 2004 |

ACTIVITIES

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| Wedding & Portrait Photographer <i>Diane Hu Photography (www.dianehuphotography.com)</i> | 2009–Present |
| Graphic Designer <i>Ethnos Community Church (www.ethnos.us)</i> | 2008–Present |
| Small Group Leader <i>UCSD Graduate Christian Fellowship (gcf.ucsd.edu)</i> | 2010 – 2011 |
| Volunteer Tutor & Webdesigner <i>Achieve Tutoring Program (www.achievesandiego.com)</i> | 2006 – 2009 |
| Officer and Webdesigner <i>UW Chapter of ACM-W (cs.washington.edu/acmw)</i> | 2004 – 2006 |
| Peer Mentor for undergraduate women <i>UW CSE</i> | 2004 – 2006 |
| Gospel Choir, Piano Ensemble, Private Piano Lessons <i>UW School of Music</i> | 2002 – 2005 |