

Dai Wei

CONTACT INFORMATION	Machine Learning Department, Carnegie Mellon University Homepage: http://www.cs.cmu.edu/~wdai	Email: wdai@cs.cmu.edu
RESEARCH INTERESTS	Large-scale machine learning, parallel machine learning algorithms and theory, supervised latent space models	
EDUCATION	Carnegie Mellon University , Pittsburgh, PA <i>Ph.D. Candidate</i> 2012 – Present <ul style="list-style-type: none">• Expected graduation date: May 2017• Department: Machine Learning, School of Computer Science California Institute of Technology , Pasadena, CA <i>Bachelor of Science (Computer Science)</i> 2012 <i>Honor</i> Wesleyan University , Middletown, CT <i>Bachelor of Art (Physics and Mathematics)</i> 2010 <i>High Honor</i>	
EMPLOYEMENT	Google , Pittsburgh, PA <i>Software Engineering Intern</i> May, 2013 – August, 2013 <ul style="list-style-type: none">· Contributed to the Ad Quality backend; developed hyperparameter-tuning framework to optimize SmartAds training system with convex and non-convex optimization algorithm; built web demo. LinkedIn , Mountain View, CA <i>Software Developer Intern</i> June, 2012 – August, 2012 <ul style="list-style-type: none">· Implemented several background tasks in the payment backend using Java, Oracle SQL, Python, and Spring Framework. OpenX , Pasadena, CA <i>Software Developer Intern</i> April 2012 – June, 2012 <ul style="list-style-type: none">· Simulated large number of users to load-test several internal servers using Erlang and Tsung; developed Tsung modules to enable Thrift protocols. Caltech Computer Science Department , Pasadena, CA <i>Research Assistant</i> June 2011 – September 2011 <ul style="list-style-type: none">· Contribute to the Community Seismic Network project which uses machine learning algorithms to detect earthquakes on smartphones and other distributed sensors.· Applied <i>coreset</i> to training Gaussian mixture model with expectation-maximization (EM) algorithm on smartphone acceleration data. <i>Teaching Assistant</i> March 2011 – present <ul style="list-style-type: none">· Hold weekly Office Hour and grade students' work for Computer Language Shop on C programming language. Argus Information & Advisory LLC , White Plains, NY <i>Summer Analyst Intern</i> June 2010 – August 2010	

- Benchmarked U.S. credit card issuers' performances and provided customer management strategies based on account-level data analysis using MySQL.
- Developed Microsoft Power Point VBA to streamline the presentation production.

Wesleyan University Physics Department, Middletown, CT

Research Assistant

January, 2008 – May 2010

- Simulated, using a computer cluster, a system of nano-particles modified by multiple single strand DNA that exhibits versatile properties with promising future applications.
- Published two papers on Langmuir and Soft Matter.

Teaching Assistant

September 2008 – May 2009

- Oversaw weekly introductory physics lab of about 10 students.
- Conducted weekly problem solving sessions for a math course: Vectors and Matrices.

Wesleyan University, Office of Residential Life, Middletown, CT

Residential Advisor

September, 2009 – May 2010

- Fostered diverse community in school dormitories by engaging residents in community activities and creating a safe and supportive residential environment.

Wesleyan University, Scientific Computing and Informatics Center, Middletown, CT

Tutor

September, 2009 – May 2010

- Provided tutoring for scientific programming such as C, Python, Mathematica, and computer graphing. Also helped students with the university's computer cluster.

Wesleyan University, Instructional Media Service, Middletown, CT

Computer Lab Consultant

August, 2007 – May 2010

- Oversaw the school computer lab and assisted students with technical problems. Set up video and audio equipments for campus events.

Wesleyan University, East Asian Studies Department, Middletown, CT

Research Assistant

August, 2009 – May 2010

- Translated and organized historical Chinese documents for research purposes.

SELECTED
PUBLICATIONS

J. Yuan, F. Gao, Q. Ho, **W. Dai**, J. Wei, X. Zheng, E. P. Xing, T. Liu, and W. Ma

“LightLDA: Big Topic Models on Modest Compute Cluster”

To Appear in International World Wide Web Conference (WWW), 2015.

W. Dai, A. Kumar, J. Wei, Q. Ho, G. Gibson, E. P. Xing

“Analysis of High-Performance Distributed ML at Scale through Parameter Server Consistency Models”

AAAI Conference on Artificial Intelligence, 2015 (oral presentation).

Y. Wang, V. Sadhanala, **Wei Dai**, W. Neiswanger, S. Sra, E. P. Xing

“Asynchronous Parallel Block-Coordinate Frank-Wolfe”

arXiv:1409.6086, 2014.

H. Cui, A. Tumanov, J. Wei, L. Xu, **W. Dai**, J. Haber-Kucharsky, Q. Ho, G. R. Ganger, P. B. Gibbons, G. A. Gibson, E. P. Xing

“Exploiting Iterative-ness for Parallel ML Computations”

Symposium on Cloud Computing (SoCC), 2014.

H. Cui, J. Cipar, Q. Ho, J. K. Kim, S. Lee, A. Kumar, J. Wei, **W. Dai**, G. R. Ganger, P. B. Gibbons,

G. A. Gibson, E. P. Xing
 “Exploiting Bounded Staleness to Speed Up Big Data Analytics”
Annual Technical Conference (ATC), 2014.

W. Dai, J. Wei, X. Zheng, J. K. Kim, S. Lee, J. Yin, Q. Ho, E. P. Xing
 “Petuum: A Framework for Iterative-Convergent Distributed ML”
NIPS, Big Learning Workshop, 2013.

W. Dai, S. K. Kumar, F. W. Starr
 “Universal two-step crystallization of DNA-Functionalized Nanoparticles”
Soft Matter, Vol. 6, pp. 6130-6135, 2010.

W. Dai, C. W. Hsu, F. Sciortino, F. W. Starr
 “Valency Dependence of Polymorphism and Polyamorphism in DNA-Functionalized Nanoparticles”
Langmuir, Vol. 26, pp. 3601-3608, 2010.

W. Dai
 “Effect of Valency on the Dynamics and Thermodynamics of DNA-linked Nanoparticles Materials”
Bachelor of Arts Honor Thesis: Wesleyan University, 2010.

CONTRIBUTED TALKS

American Physical Society, March 2010 in Seattle, USA. Title: Phase Behavior of DNA-Functionalized Nanoparticles: Dependence on Number and Orientation of Attached DNA strands.

California Institute of Technology: Summer Undergraduate Research Fellowship Seminar Day, October 2011. Title: A Smartphone that Learns: Toward Adaptive Earthquake Detection on Smartphones. (Advanced to final round in Peripall Speaking Competition.)

HONORS AND AWARDS

High Honors from Wesleyan University Physics Department: Awarded for my undergraduate honor thesis work, 2010.

Phi Beta Kappa Admission: A selective academic honor society for distinguished students at the nation’s institutions of higher learning, 2010.

Student Prizes at Wesleyan University: Bertman Prize (Physics), Karl Van Dyke Prize (Physics), 2010; Sherman Prize (Mathematics), 2007.

Freeman Asian Scholarship: A four-year full scholarship awarded to two students per country from eleven Asian countries for outstanding scholastic and leadership achievements, 2007.

PROGRAMMING

C/C++, Matlab, Python, Java, Linux, L^AT_EX 2_ε