

# HonglinZhang

## about

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## languages

Chinese (native)

English (professional)

German (elementary)

## programming

Java, Python/Ruby, C/C++

FORTRAN, OpenMP/MPI,

MATLAB/Mathematica

L<sup>A</sup>T<sub>E</sub>X, SVN/Git, Bash/Zsh

## courses

machine learning, databases, distributed systems, parallel computation, numerical methods for ODE, PDE, and SDE, probability, statistical physics, nonlinear dynamics

## education

May'14 **Master of Computer and Information Technology** 4.00 / 4.00  
University of Pennsylvania, Philadelphia, PA

Jul'12 **Bachelor of Science, Physics and Mathematics** 85 / 100  
Tsinghua University, Beijing, China

## experience

May-Aug'13 **Amazon Web Services** Software Development Engineer Intern  
optimized the webpage rendering time on algorithmic level, saving rendering time up to 86%; built security tools with Ruby on Rails from scratch using EC2, S3, CloudFormation, CloudSearch, RDS, SNS, SQS, IAM.

2010-2012 **Department of Physics, Tsinghua University** Researcher  
studied bifurcation and noise impact on Helium ionization in strong laser field; program optimization experience with Vtune and compiler; proficient with OpenMP and MPI programming on clusters (512 cores); hands-on experience with probability, statistics, stochastic process simulation, and Hamiltonian systems.

## projects

May'13 **Distributed Search Engine From Scratch** 50,000+ lines, Java  
a Google style decentralized search engine, including distributed, scalable crawling, indexing with ranking, and PageRank for result showing; personally involved in incremental page indexing (200,000+ pages), weighted term frequency calculation (meta-data analysis), NLP performance tuning (36 times faster), and ranking function optimization.

April'13 **YouTube DHT Cacher** 1,000+ lines, Java  
a scalable decentralized system, which caches YouTube records, built on top of distributed hash table, FreePastry, and key/value database, Oracle BerkeleyDB, with REST/JSON style message passing; front-end and back-end development; YouTube API integration.

May'11 **Atmospheric Simulation on Distributed System** 1,000+ lines, C  
first started with OpenMP in C, later rewrote with MPI; 4-dimension "matrix" numerical calculation; 10 GB scale data management; multi-core programming experience.

Aug'10 **C++ Code Analyzer** 2,000+ lines, C++  
a program written by a four-person group that analyzed function calls and variable references; group leader, hands-on experience with text parsing.

## organization

2012-2013 **Emacs Club, University of Pennsylvania** Core Member  
weekly discussions about emacs packages and elisp techniques.