

Deyi Zhang

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EDUCATION	Ph.D., Operations Research	Aug. 2010 – May 2015 (Expected)
	The University of Texas at Austin, Austin, TX	
	M.S., Mathematics	Aug. 2008 – May 2010
	Texas Tech University, Lubbock, TX Thesis: <i>Least Squares Approximation by B-Splines with Free Knots</i>	
	B.S., Mathematics and Applied Mathematics	Sept. 2004 – Jun. 2008
	Nankai University, Tianjin, China	

RELATED GRADUATE COURSEWORK	<ul style="list-style-type: none"> • <u>Statistics and Machine Learning</u>: Mathematical Statistics, Linear Models, Systems Simulation, Time Series and Dynamic Models, Stochastic Differential Equation, Reinforcement Learning • <u>Operations Research</u>: Linear Programming, Nonlinear Programming, Stochastic Optimization, Applied Stochastic Processes, Markov Decision Processes • <u>Computation</u>: Numerical Analysis I / II, Scientific Computing with C++ & UNIX, Parallel Algorithms in Scientific Computing, Parallel Computing for Scientists and Engineers
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COMPUTER SKILLS	<ul style="list-style-type: none"> • <u>Languages</u>: C, C++, R, Python, MATLAB, FORTRAN • <u>Database</u>: MySQL, SQLite • <u>Applications/Software</u>: OpenMP, MPI, IBM ILOG CPLEX, GAMS, Microsoft Office Suite, Arena • <u>Platform</u>: Linux / Windows
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WORKING EXPERIENCE	Software Developer (Intern), Research and Innovation, Geophysics & Subsurface Dept. Repsol USA	Jun. 2011 – Aug. 2011
	<ul style="list-style-type: none"> • Worked with domain scientists (geophysicists) to improve computational performance for the prototyped scientific codes through code modularization, optimization, and parallelization via OpenMP on multi-core machine. The result was code acceleration up to more than 10x, and performance increased by 20%. Overlapped computation and I/O manipulation. • Independently developed a 3D scattered interpolator for post-processing seismic imaging data. • C and FORTRAN mixed programming 	

RESEARCH EXPERIENCE	Ph.D. Research , The University of Texas at Austin	Fall 2012 – Current
	<ul style="list-style-type: none"> • Proposed a Monte Carlo algorithm to estimate hidden Markov model parameters with confidence. • Extended the algorithm to estimate parameters of several simulated hidden Markov models. Coded as an R package. • Applied the methodology on a real semiconductor data set to derive 	

	confidence intervals.	
	Master Research , Texas Tech University	Mar. 2009 –Jun. 2010
	<ul style="list-style-type: none"> Developed a MATLAB application by implementing a heuristic optimization algorithm to do least squares data fitting based on B-Spline basis functions. Parallelized the least squares approximator on Linux clusters using MPI in C. 	
SELECTED COURSE PROJECTS	Reinforcement Learning	Spring 2013
	<ul style="list-style-type: none"> Adapted a Monte Carlo Tree Search algorithm to solve industrial engineering problems modeled as Markov Decision Process. Implemented in Python using object-orient utilities of the language. Performed output analysis based on benchmarking to identify algorithm behaviors. 	
	Parallel Algorithms in Scientific Computing	Spring 2012
	<ul style="list-style-type: none"> Analyzed the complexity and scalability of an existing parallel matrix factorization algorithm. Prototyped by MATLAB. Implemented in C using libraries of BLAS, LAPACK and OpenMP. Achieved linear speedup on a machine with 16 cores by benchmarking on medium to large test instances. 	
	Integer Programming & Stochastic Optimization	Spring 2011 & Spring 2012
	<ul style="list-style-type: none"> Proposed a novel combinatorial algorithm to solve a class of large-scale mixed-integer programs. Implemented in both CPLEX C Callable library and CPLEX Python API to solve test problems. 	
TEACHING EXPERIENCE	Teaching Assistant , The University of Texas at Austin	Spring 2011 - Fall 2013
	<ul style="list-style-type: none"> Parallel Computing for Science and Engineering Scientific and Technical Computing Introduction to Scientific Computing 	
	Teaching Assistant , Texas Tech University.	Fall 2008 – Summer 2010
	<ul style="list-style-type: none"> Advanced Engineering Mathematics Mathematical Analysis II, Calculus II College Algebra with Review, Intermediate Algebra 	
PROFESSIONAL DEVELOPMENT	Technical Conference Attended	
	<ul style="list-style-type: none"> IEEE International Conference on Cluster Computing: 2011 	
	Volunteer	
	<ul style="list-style-type: none"> INFORMS Annual Meeting: 2010 	
ADDITIONAL	References available upon request.	