Yaohang Li

Email: yaohangli@gmail.com
503 Willow View Dr., Greensboro, NC 27455
Office: (336) 334-7245x117 Cell Phone: (336) 392-1963 Fax: (336) 334-7244
http://abner.ncat.edu/yaohang

EDUCATION:	Florida State University, Tallahassee, Florida
Aug., 2003	Ph.D., Computer Science
	Major Advisor: Dr. Michael Mascagni
	Dissertation Title: A Grid Computing Infrastructure for Monte Carlo Applications
Aug., 2000	Florida State University, Tallahassee, Florida
	M.S., Computer Science
July, 1997	South China University of Technology, Guangzhou, China
	B.S., Computer Science and Engineering
	Minor, English Literature

HONORS:	**By National Science Foundation**
2009	CAREER Award
	By National Center for Supercomputing Applications (NCSA):
2007	Summer Faculty Fellowship
	By North Carolina A&T State University:
2005	"Rookie of the Year" Young Researcher Award
	By Oak Ridge Associated Universities (ORAU):
2005	Ralph E. Powe Junior Faculty Enhancement Award
	By Florida State University:
2002	School of Computational Science and Information Technology Fellowship
2002	Dissertation Research Grant Award, Graduate Study Office
2001	School of Computational Science and Information Technology Fellowship
	By IBM:
1997	IBM Manager Recognized Award

PROFESSIONAL	**North Carolina Agriculture and**	**Greensboro, NC**
EXPERIENCE:	**Technology State University**	
Jul. 2009-present	Associate Processor, Department of Computer Science	
2003-2009	Assistant Professor, Department of Computer Science	
Summer, 2008	**Oak Ridge National Laboratory**	**Oak Ridge TN**
	Participating University Faculty	
Summer, 2007	**National Center for Supercomputing Applications**	**Urbana-Champagne, IL**
	Summer Faculty Fellow, University of Illinois, Urbana-Champagne	
Summer, 2006	**Oak Ridge National Laboratory**	**Oak Ridge, TN**
	Participating University Faculty	
Summer, 2003	**Oak Ridge National Laboratory**	**Oak Ridge, TN**
	Research Associate, Computer Science and Mathematics Division	
1999–2003	**Florida State University**	**Tallahassee, FL**

	Research Assistant, Department of Computer Science	
Spring, 2002	**University of Salzburg**	**Salzburg, Austria**
	Visiting Scholar, Department of Scientific Computing	
Winter, 2001	**Florida State University**	**Tallahassee, FL**
	Research Assistant, Department of Chemical Engineering	
1998–1999	**University of Southern Mississippi**	**Hattiesburg, MS**
	Research Assistant, Computer Science	
1997–1998	**IBM China Ltd.**	**Guangzhou, China**
	IT Specialist, Software and Networking	

RESEARCH INTERESTS:

Computational Science, Computational Biology
Monte Carlo Methods, Markov Chain Monte Carlo
Grid/Distributed/Parallel Computing, High Performance Computing
Bio-inspired Approaches
Random Number Generation

JOURNAL PAPERS

-- **Yaohang Li**, N. D. Arnold, C. E.M. Strauss, A. J. Bordner, Y. Tian, X. Tao, T. C. Schulthess, A. Gorin, "*Extensive Exploration of Protein Conformational Space Reveals Promises and Pitfalls of ab initio Folding Calculations,*" submitted to Journal of Bioinformatics and Computational Biology, 2008.

-- **Yaohang Li**, I. Rata, E. Jakobsson, "*Multi-Scoring Functions Sampling in Protein Loop Structure Prediction,*" submitted to Journal of Computational Biology, 2008.

-- I. Rata, **Yaohang Li**, E. Jakobsson, "*Backbone Statistical Potential from Local Sequence-Structure Interactions in Protein Loops,*" submitted to Journal of Phys. Chem. B, 2009.

-- **Yaohang Li**, M. Mascagni, "*Optimizing Dynamic Grid-based Resources for Large Scale Monte Carlo Applications,*" submitted to Mathematics and Computers in Simulation, 2008.

-- **Yaohang Li**, M. Mirugi, M. Mascagni, "*Test the Rule 30 Cellular Automata Random Number Generator,*" submitted to Mathematics and Computers in Simulation, 2008.

-- **Yaohang Li**, V. A. Protopopescu, N. Arnold, X. Zhang, A. Gorin, "*Hybrid Parallel Tempering/Simulated Annealing Method,*" Applied Mathematics and Computation, **212**: 216-228, 2009.

-- **Yaohang Li**, M. Mascagni, A. Gorin "*A Decentralized Parallel Implementation for Parallel Tempering Algorithm,*" Parallel Computing, **35**(5): 269-283, 2009.

-- **Yaohang Li**, C. E. M. Strauss, A. Gorin, "*Hybrid Parallel Tempering and Simulated Annealing Method – an Efficient Sampling Method in ab initio Protein Folding,*" International Journal of Computational Science, **2**(5):646-661, 2008.

-- **Yaohang Li,** Y. D. Song, "*An Adaptive and Trustworthy Software Testing Framework on the Grid,*" Journal of SupterComputing, **46**:124-138, 2008.

-- **Yaohang Li**, D. Chen, X. Yuan, "*Trustworthy Remote Compiling Service for Grid-based Scientific Applications,*" Journal of SuperComputing, **41**(2):119-131, 2007.

-- **Yaohang Li**, "*A Bio-inspired Adaptive Job Scheduling Mechanism on the Grid,*" International Journal of Computer Science and Network Security, **6**(3B): 1-7, 2006.

-- **Yaohang Li**, M. Mascagni, "*Grid-based Quasi-Monte Carlo Applications,*" Monte Carlo Methods and Applications, **11**: 39-55, 2005.

-- **Yaohang Li**, V. A. Protopopescu, A. Gorin, "*Accelerated Simulated Tempering,*" Physics Letters A, **328**(4): 274-283, 2004.

-- **Yaohang Li**, M. Mascagni, R. van Engelen, Q. Cai, "*A Grid Workflow-Based Monte Carlo Simulation Environment,*" Journal of Neural Parallel and Scientific Computations, **12**:439-455, 2004.

-- **Yaohang Li**, M. Mascagni, "*Analysis of Large-scale Grid-based Monte Carlo Applications,*" International Journal of High Performance Computing Applications (IJHPCA), **17**(4): 369-382, 2003. (Jan. 2006, one of the 50 Most-Frequently-Read Articles in International Journal of High Performance Computing Applications. http://hpc.sagepub.com/reports/mfr7.dtl)

-- Y. Zhang, **Yaohang Li**, M. H. Peters, "*Nonequilibrium, Multiple-Time Scale Simulations of Ligand-Receptor Interactions in Structured Protein Systems*," Proteins: Structure, Function, and Genetics, **52**(3): 339-348, 2003.

-- M. Mascagni, A. Karaivanova, **Yaohang Li**, "*Quasi-Monte Carlo method for elliptic boundary value problems*", Monte Carlo Methods and Applications, **7**: 283-294, 2001.

BOOK CHAPTERS:	-- **Yaohang Li**, M. Mascagni, "*An Overview of Grid-based Monte Carlo Computing,*" Grid Technologies, Emerging from Distributed Architectures to Virtual Organizations, WIT Press, ISBN: 978-1-84564-055-2, 2006.
	-- Y. D. Song, **Yaohang Li**, M. Bikdash, T. Dong, "*Cooperative Control of Multiple UAV's in Close Formation Flight via Nonlinear Adaptive Approach,*" Theory and Algorithms for Cooperative Systems, World Scientific Publishing Company, ISBN: 978-9-81256-020-9, 2004.
PEER-REVIEWED CONFERENCE PAPERS:	-- **Yaohang Li**, D. Wardell, V. Freeh, "*A Resource-Efficient Computing Paradigm for Computational Protein Modeling Applications,*" accepted in 8th IEEE International Workshop on High Performance Computational Biology, (HiCOMB09), 2009.
	-- **Yaohang Li**, "*A Population-based Approach for Diversified Protein Loop Structure Sampling,*" accepted in International Conference on Computational Science, (ICCS09), 2009.
	-- **Yaohang Li**, M. Mascagni, "A Computational Digest using Pseudorandom Number Generators with the 'Fast Leap-Ahead Property'", submitted to Logical Aspects of Fault Tolerance (LAFT) co-located with LICS 2009, Los Angels, 2009.
	-- **Yaohang Li**, A. J. Bordner, Y. Tian, X. Tao, A. Gorin, "*Extensive Exploration of the Conformational Space Improves Rosetta Results for Short Protein Domains,*" Proceedings of 7th Annual International Conference on Computational Systems Bioinformatics (CSB08), Stanford, 2008.
	-- **Yaohang Li**, A. Esterline, C. Baber, K. Fuller, M. Burns, T. L. Hanson, T. LeFebvre, M. Schultz, M. Govett, P. Hamer, A. Mysore, "*A Sensor Information Framework for Integrating and Orchestrating Distributed Sensor Services,*" Proceedings of International Conference on Parallel and Distributed Processing Techniques and Applications, (PDPTA08), Las Vegas, 2008.
	-- A. Frazier, S. Hudson, **Yaohang Li**, X. Yuan, "*Developing Software System Security Modules,*" Proceedings of 12th Colloquium for Information Systems Security Education, (CISSE08), Dallas, 2008.
	-- **Yaohang Li**, M. Mascagni, A. Gorin "*Decentralized Replica Exchange Parallel Tempering: An Efficient Implementation of Parallel Tempering using MPI and SPRNG,*" Proceedings of International Conference on Computational Science and Its Applications (ICCSA07), Kuala Lumpur, 2007.
	-- **Yaohang Li**, J. Clark, K. Williams, Y. Song, "*Efficient Parallel Implementation of Evolutionary Markov Chain Monte Carlo,*" Proceedings of International Conference on Parallel and Distributed Processing Techniques and Applications, (PDPTA07), Las Vegas, 2007.
	-- **Yaohang Li**, T. Dong, Y. Song, "*Using Grid Computing for Distributed Software Testing,*" Proceedings of International Conference on Parallel and Distributed Processing Techniques and Applications, (PDPTA06), Las Vegas, 2006.

-- **Yaohang Li**, T. Dong, X. Zhang, Y. Song, X. Yuan, "*Large-Scale Software Unit Testing on the Grid,*" Proceedings of IEEE International Conference on Granular Computing, (GrC06), Atlanta, 2006.

-- **Yaohang Li**, J. Clark, X. Zhang, "Parallel Implementation of the Accelerated Simulated Tempering Method," Proceedings of 3rd International Conference on Neural, Parallel & Scientific Computations, (NPSC06), Atlanta, 2006.

-- X. Zhang, **Yaohang Li**, A. Myklebust, "*Hybrid Optimization of Geometrically Trimmed NURBS Surfaces,*" Proceedings of ASME International Mechanical Engineering Congress & Exposition, (IMECE05), Orlando, 2005.

-- **Yaohang Li**, D. Chen, X. Yuan, Y. Yu, A. Esterline, "*Secure Remote Compiling Service on the Grid,*" Proceedings of International Conference on Parallel and Distributed Processing Techniques and Applications, (PDPTA05), Las Vegas, 2005.

-- **Yaohang Li**, M. Mascagni, "*A Bio-inspired Job Scheduling Algorithm for Monte Carlo Applications on a Computational Grid,*" proceedings of 17th IMACS World Congress, Scientific Computation, Applied Mathematics, and Simulation, Paris, France, 2005.

-- **Yaohang Li**, T. Dong, M. Bikdash, Y. Song, "*Path Planning for Unmanned Vehicles using Ant Colony Optimization on a Dynamic Voronoi Diagram,*" Proceedings of International Conference on Artificial Intelligence, (ICAI05), Las Vegas, 2005.

-- X. Yuan, P. Vega, H. Yu, **Yaohang Li**, "*A Personal Software Process Tool for Eclipse Environment*", Proceedings of International Conference on Software Engineering Research and Practice (SERP05), Las Vegas, 2005.

-- **Yaohang Li**, C. E. M. Strauss, A. Gorin, "*Parallel Tempering in Rosetta Practice,*" Proceedings of International Conference on Bioinformatics and its Applications, (ICBA04), Fort Lauderdale, Florida, 2004.

-- **Yaohang Li**, M. Mascagni, "*E-Science on the Grid: Toward a Dynamic E-Scienc Automation with XML and Workflow Techniques,*" Proceedings of the 8th World Multi-Conference on Systemics, Cybernetics, and Informatics, (SCI04), Orlando, 2004.

-- **Yaohang Li**, Y. Song, "*Bio-inspired Fault Tolerant and Adaptive System Modeling and Simulation on the Grid,*" Proceedings of the International Conference on Computing, Communications and Control Technologies, (CCCT04), Austin, 2004.

-- **Yaohang Li**, M. Mascagni, "*e-Science Workflow on the Grid*," Proceedings of the IADIS International Conference, (e-Society04), Avila, Spain, 2004.

-- **Yaohang Li**, Q. Cai, Y. Li, "*Toward a Dynamic E-Commerce Automation with XML and Workflow Techniques on the Grid,*" Proceedings of IEEE SoutheastCon, 2004.

-- **Yaohang Li**, M. Mascagni, M. H. Peters, "Grid-based Nonequilibrium Multiple-Time Scale Molecular Dynamics/Brownian Dynamics Simulations of Ligand-Receptor Interactions in Structured Protein Systems," Proceedings of the 1st BioGrid Workshop at the 3rd IEEE/ACM Symposium Cluster Computing and the Grid, Tokyo, 2003.

-- M. Mascagni, **Yaohang Li**, "*Computational Infrastructure for Parallel, Distributed, and Grid-based Monte Carlo Computations*," Proceedings of the Fourth International Conference on Large-Scale Scientific Computations (LSSC03), Sozopol, Bulgaria, Lecture Notes in Computer Sciences, **2907**: 39-52, 2003.

-- **Yaohang Li**, M. Mascagni, R. van Engelen "*GCIMCA: A Globus and SPRNG Implementation of a Grid Computing Infrastructure for Monte Carlo Applications,*" Proceeding of the International Multiconference in Computer Science and Computer Engineering, (PDPTA03), 2003.

-- **Yaohang Li**, M. Mascagni, "*Improving Performance via Computational Replication on a Large-Scale Computational Grid*," proceedings of the GP2PC at the IEEE/ACM International Symposium on Cluster Computing and the Grid, IEEE/ACM (CCGRID03), Tokyo, 2003.

-- **Yaohang Li**, M. Mascagni, "*Grid-based Monte Carlo Applications*," Lecture Notes in Computer Science, **2536**:13-24, Grid Computing Third International Workshop/Conference, (GRID02), Baltimore, 2002.

-- **Yaohang Li**, A. Ali, "*Neural Network in Business Application*", Proceedings of IEMS'99 International Conference, Cocoa Beach, FL, 1999.

-- **Yaohang Li**, M. Mascagni, "*A Distributed Monte Carlo Integration Tool*", Proceedings of the First Southern Symposium on Computing, Hattiesburg, MS, 1998.

TECHNICAL PAPER:

-- **Yaohang Li**, "*Computational Measure of Uniformity,*" Technical Report TR-000704, Dept. of Computer Science, Florida State University, 2000.

GRANTS AND CONTRACTS:

National Science Foundation

Yaohang Li, $1,000,000, Co-Principle Investigator, (PI: Yong-Duan Song), 10/1/2004-10/1/2007

Proposal Title: Biologically-inspired Adaptive and Reconfigurable Systems: Modeling, Synthesis, and Simulation

Army Research Laboratory

Yaohang Li, $600,000, Co-Principle Investigator, (PI: Yong-Duan Song) 7/1/2004~7/1/2007

Proposal Title: Bio-inspired Control System for Unmanned Grounded Vehicle

Appalachian State University (University of North Carolina, Office of the President)

Yaohang Li, $45,143, Principle Investigator, 7/1/2004~7/1/2006

Proposal Title: A Consortium to Promote Computational Science and High Performance Computing

Oak Ridge National Laboratory, Department of Energy

Yaohang Li, $22,336, Principle Investigator, 5/1/2004~5/1/2005

Proposal Title: Protein Structure Prediction Research

University of North Carolina General Administration

Yaohang Li, $50,000, Principle Investigator, 6/1/2004~6/1/2005

Proposal Title: Building an NCAT Campus Grid

Oak Ridge Associated Universities, Ralph E. Powe Young Faculty Enhancement Award

Yaohang Li, $5,000, Principle Investigator, 5/1/2005~5/1/2006

Proposal Title: Advanced Global Optimization Approaches for High-Resolution Protein Structure Modeling

North Carolina A&T State University, Futures Venture

Yaohang Li, $15,000, Principle Investigator, 7/1/2006~7/1/2007

Proposal Title: Improve NC A&T IT Infrastructure with Grid Computing

National Oceanic and Atmospheric Administration

Yaohang Li, $13,500,000, Co-Principle Investigator, (PI: Solomon Bililign), 9/1/2006~8/31/2011

Proposal Title: NOAA Interdisciplinary Scientific Environmental Technology (ISET) Cooperative Research and Education Center

National Security Agency

Yaohang Li, $58,576, Co-Principle Investigator, (PI: Xiaohong Yuan), 7/1/2007~6/31/2008

Proposal Title: Integrating Software System Security Evaluation into Computer Science Curriculum

National Science Foundation

Yaohang Li, $18,045, PI, (Collaborative PIs: Clayton Ferner, UNC-Wilmington, Barry Wilkinson, UNCC), 7/1/2008~6/30/2010

Proposal Title: Collaborative Research: Enhancing Teaching of Grid Computing to Undergraduate Students by using a Workflow Editor

National Science Foundation

Yaohang Li, $90,000, PI, 9/1/2008~9/31/2009

Proposal Title: A Novel Multi-Scoring Functions Sampling Approach to Improve Protein Modeling Resolution and its Applications in Protein Loop Structure Prediction

National Science Foundation

Yaohang Li, $400,000, PI, 8/1/2009~7/31/2014

Proposal Title: CAREER: Novel Sampling Approaches for Protein Modeling Applications

INVITED TALKS: **University of North Carolina, Charlotte,** "*Hybrid Parallel Tempering/Simulated Annealing and its Applications in ab initio Protein Folding*," Charlotte, NC, Nov. 3, 2006.

Partners in Technologies, Oak Ridge Associated Universities, "*Parallel Tempering in Rosetta Practice*," Oak Ridge, TN, Apr. 21, 2005.

IBM University Day, *"Protein Folding on the Campus Grid,"* Raleigh, NC, Oct. 15, 2004.

Oak Ridge National Laboratory, "*Grid-based Monte Carlo Applications,*" Oak Ridge, TN, USA, Jan. 24, 2003.

AVID LLC, *"Global Optimization Methods,"* Blacksburg, VA, Dec. 27, 2004.

South China University of Technology, "*Grid Computing Infrastructure for Monte Carlo Applications*," Guangzhou, China, Jun. 18, 2002.

SOFTWARE PACKAGES: **SPRNG - Scalable Parallel Random Number Generation Library** (DOE-funded)

Development, Maintenance, and Trouble-shooting

Grid-computing Infrastructure for Monte Carlo Applications

Main Developer

MD/BD Simulation for Structured Protein System

Development

Parallel Quasirandom Number Generators Package (used in S-PLUS)

Main Developer

CERTIFICATIONS: **By the State Council Office of Promotion and Application of Electronics And Information System in China:**

1997	National Certified System Analyst
1996	National Certified Senior Programmer
1994	National Certified Programmer

By IBM:

1996	Professional Certification of IBM OS/2 and LAN Server Engineer

TEACHING EXPERIENCE: **North Carolina A&T State University   Greensboro, NC**

Assistant Professor, Department of Computer Science

Fall, 2008   COMP476 Networked Computer Systems

COMP467 Database Design

	COMP690 Wireless Sensor Network
	COMP690 Introduction to Grid Computing
Spring, 2008	COMP467 Database Design
	COMP750 Distributed Systems
Fall, 2007	COMP467 Database Design
	COMP755 Advanced Operating Systems
Spring, 2007	COMP467 Database Design
	COMP690 Fundamental of Natural Computing
Fall, 2006	GEEN163 Introduction to Computer Programming
	COMP755 Advanced Operating Systems
Spring, 2006	COMP790 High Performance Computing and Monte Carlo Methods
	COMP645 Artificial Intelligence
	COMP445 Introduction to Artificial Intelligence
Fall, 2005	COMP755 Advanced Operating Systems
	COMP750 Distributed Systems
Spring, 2005	COMP755 Advanced Operating Systems
	COMP790 High Performance Computing and Monte Carlo Methods
Fall, 2004	COMP750 Distributed Systems
	COMP740 Advanced Artificial Intelligence
	COMP467 Database Design
Spring, 2004	COMP445 Introduction to Artificial Intelligence
	COMP645 Artificial Intelligence
	COMP467 Database Design
Fall, 2003	COMP467 Database Design (2 sections)

Florida State University   **Tallahassee, FL**

Instructor, Department of Computer Science

| Spring, 2003 | CGS3460 FORTRAN for Non-specialist |

University of Salzburg   **Salzburg, Austria**

Teaching Assistant, Department of Scientific Computing

| Spring, 2002 | Graduate course "Concrete Mathematics" |
| | Graduate course "Advanced Topics in Monte Carlo Methods" |

STUDENTS GRADUATED:	Lisa Sims	Master's Thesis	Fall, 2006
	Jason Clark	Master's Thesis	Spring, 2006
	Shawn Gunthrop	Master's Project	Spring, 2007
	Zonghong Han	Master's Thesis	Fall, 2007
	Michael Burns	Master's Project	Fall, 2007
	Stephan Hudson	Master's Thesis	Spring, 2008
	Avery Harvey	Master's Project	Spring, 2009
	Willie Gilchrist	Master's Project	Spring, 2006
	Karlid Bazarri	Master's Project	Spring, 2006
	Tao Dong	Master's Thesis	Fall, 2005
	William Mirugi	Master's Thesis	Spring, 2005
	Rogelio Roper	Master's Project	Spring, 2005
	Daniel Chen	Master's Thesis	Fall, 2004

UNIVERSITY SERVICES:	**Curriculum Committee Chair**	2005~present
	Department of Computer Science, North Carolina A&T State University	
	Curriculum Committee Member	2005~present
	College of Engineering, North Carolina A&T State University	
	IT Committee Member	2007~present
	Representative of North Carolina A&T State University at SURA Grid	
	Computational Science and Engineering Program Member	2004~present
	North Carolina A&T State University	
	Graduate Study Committee Member	2003~present
	North Carolina A&T State University	
	Curriculum Committee Member	2003~2005
	Department of Computer Science, North Carolina A&T State University	
	Department Webmaster	2003~2005
	Department of Computer Science, North Carolina A&T State University	

AFFILIATIONS: IEEE
ACM

LANGUAGES: Fluent in English, Chinese, and Cantonese
Can function a little bit in German and Japanese