

Rong Ge

Education

Doctor of Philosophy , Computer Science Virginia Polytechnic Institute and State University , Blacksburg, VA	Aug. 2007
Master of Engineering , Computer Science and Engineering University of South Carolina , Columbia, SC	Aug. 2005
Master of Science , Fluid Mechanics Tsinghua University , Beijing, China	Apr. 1998
Bachelor of Science , Fluid Mechanics Tsinghua University , Beijing, China	Jul. 1995

Honors and Awards

• Selected attendee to CRA-W & CDC Computer Architecture Summer School at Princeton University		Jul. 2006
• Outstanding Graduate Researcher	University of South Carolina	Apr. 2005
• Member of UPE Honor Society	University of South Carolina	Apr. 2005
• Student Volunteer Grant to attend SC '02		Nov, 2002
• Best Graduate Thesis	Tsinghua University	Jul. 1998
• Graduate with Honor (1 out of 50 graduate students)	Tsinghua University	Jul. 1998
• Guanghuang Scholarship for Outstanding Graduate	Tsinghua University	1996
• Excellent Student Scholarship	Tsinghua University	1991, 1992, 1993, 1994

Publications

Journal Papers:

1. Kirk W. Cameron, Rong Ge, Xian-He Sun, “*lognP and log3P: Accurate analytical models of point-to-point communication in distributed systems*”, IEEE Transactions on Computer, Volume 56, No. 3:314-327, 2007.
2. Xizhou Feng, Rong Ge, and Kirk W. Cameron, “*The Argus Prototype: Aggregate Use of Load Modules as a High density Supercomputer,*” Concurrency and Computation: Practice and Experience, Volume 18. No. 15, 2006, Pages 1975-1987.
3. Kirk W. Cameron, Rong Ge, Xizhou Feng, “*High-Performance, Power-Aware Distributed Computing for Scientific Applications*”, IEEE Computer, Volume 38. No. 11, 2005, Pages 40-47.
4. Ke-Qin Zhu, Rong Ge, Bao-Shu Xi, “*The Squeezing flow of Electro-rheological Fluids between Circular Plates*”, Journal of Tsinghua University (Science and Technology), No. 8, 1999.

Book Chapter:

1. Kirk W. Cameron, Rong Ge, Xizhou Feng, “*Designing Computational Clusters for Performance and Power*”, Advances in Computers, 2007.

Conference/Workshop Papers:

1. Rong Ge, Xizhou Feng, Wuchun Feng, and Kirk Cameron, “*CPU MISER: A Performance-Directed, Run-Time System for Power-Aware Clusters*”, International Conference on Parallel Processing (ICPP07), Sept. 2007. (Xi'an, China)
2. Rong Ge, and Kirk W. Cameron, “*Power-Aware Speedup*”, Proceedings of the 21st IEEE International Parallel and Distributed Processing Symposium (IPDPS 07), March 2007. (Long Beach, CA)
3. Rong Ge, Xizhou Feng, and Kirk W. Cameron, “*Performance-constrained, Distributed DVS Scheduling for Scientific Applications on Power-aware Clusters,*” Proceedings of 2005 ACM/IEEE conference on High Performance Computing, Networking and Storage Conference (SC 2005), Seattle, WA, 2005.
4. Xizhou Feng, Rong Ge, and Kirk W. Cameron, “*Power and Energy Profiling of Scientific Applications on Distributed Systems*”, Proceedings of the 19th IEEE International Parallel and Distributed Processing Symposium

(IPDPS 05), April 2005. (Denver, CO)

5. Rong Ge, Xizhou Feng, and Kirk W. Cameron, “*Improvement of Power-Performance Efficiency for High-End Computing*”, Proceedings of the 19th IEEE International Parallel and Distributed Processing Symposium (IPDPS'05) - HPPAC '05 Workshop, April 2005. (Denver, CO)
6. Xizhou Feng, Rong Ge, and Kirk W. Cameron, “*ARGUS: Supercomputing in 1/10 Cubic Meter*”. Parallel and Distributed Computing and Networks (PDCN 2005), February 2005.
7. Kirk W. Cameron, Rong Ge, Xizhou Feng, Drew Varner, and Chris Jones, POSTER: “*High-performance, Power-aware Distributed Computing Framework*”. Proceedings of the 16th ACM/IEEE International Conference on High Performance Computing and Communications (SC 2004), November 2004.
8. Kirk W. Cameron and Rong Ge, “*Predicting and Evaluating Distributed Communication Performance*”, Proceedings of the 16th ACM/IEEE International Conference on High Performance Computing, Networking and Storage Conference (SC 2004), November, 2004. (Pittsburgh, PA)

Papers Submitted:

1. Xizhou Feng, Rong Ge, Kirk W. Cameron, “*Power-Performance Evaluation for Scientific Applications on Distributed Systems*”, submitted to IEEE Transactions on Parallel and Distributed Systems.

Papers in Preparation:

1. Rong Ge and Kirk W. Cameron, “*Power Aware Speedup: Predicting the Impact of Power Modes on Distributed Systems*”, in Preparation for Journal of Parallel and Distributed Computing.

Thesis:

1. R. Ge, “Theories and Techniques for Efficient High-End Computing”, Ph.D. thesis, Virginia Tech, Aug. 2007. (Doctoral Showcase in Supercomputing Conference 2007).
2. R. Ge, “*The flow of Electro-rheological Fluids in Electro-rheological Devices*”, Master thesis, Tsinghua University, 1998. (Best Graduate Thesis Award)
3. R. Ge, “*The Parallel-Flow of Electro-rheological Fluids in Electro-rheological Devices*”, Bachelor thesis, Tsinghua University, 1995.

Paper Reviewer

- IEEE Transaction on Parallel and Distributed Systems
- IEEE Transaction on Computers
- Supercomputing Conference
- International Conference on Parallel Processing
- High-Performance Power-Aware Computing Workshop

Professional Membership

IEEE, IEEE Women in Engineering, ACM, and UPE

Employment

Instructor

Department of Computer Science, Virginia Tech, Blacksburg, VA, Fall 2006

Undergraduate CS course CS1044: Introduction to Programming in C++

Research Assistant and System Administrator

Scape research group in the Department of Computer Science at Virginia Tech, 07/05-present

Scape research group in the Department of Computer Science at the University of South Carolina, 05/02-06/05

Research interests include high-performance computing, performance evaluation and analysis, power-aware computing, scientific computing, distributed and parallel systems. For details see my publications

Administrated Beowulf cluster (single core or dual core IA32/IA 64/AMD x86_64), SGI Altix 3300 IA64 SMP supercomputer, SUN and Apple workstations

Teaching Assistant

Department of Computer Science, University of South Carolina, Columbia, SC, 08/01-05/04

Graduate level courses including scientific computing, computer architecture and real-time embedded systems

Engineer

China Telecom Research & Development Center, Beijing, China, 04/98-09/00

Design and develop broad-band ATM and Ethernet telecommunication/data networks, and their novel applications and services

Administrate SUN, HP servers and Informix database including SUN Ultra Enterprise 6000 system (extra work)

Research Assistant

Department of Engineering Mechanics, Tsinghua University, China, 10/94-03/98

Research topic "Flows of Electrorheological Fluids in Electrorheological Devices". Research activities include flow analytical modeling and numerical simulation.

Selected Systems and Software Developed

- CPU MISER: a system software for energy reduction in workstations, servers, and clusters.
- DORI: a power-aware high-performance cluster built from dual-processor, dual-core AMD systems.
- NEMO: the first generation power-aware, high-performance cluster built from Dell laptop computers.
- PowerPack: the first power measurement and analysis system to adapt cluster-wide energy and power at component-level granularity.
- ARGUS: high-density supercomputer built from network load modules.
- SC Grid: an experimental computational grid built with two research clusters and more than 50 Solaris, Linux and Mac lab workstations in the Department of Computer Science and Engineering, University of South Carolina.
- Beijing Telecom VOD System: a Video-On-Demand system that provided multimedia service over ATM and WAN to high speed internet subscribers in Beijing.
- Beijing Telecom WebTV System: a hardware/software platform that provided Internet-based video service to telecom subscribers.

Programming Language and Platforms

- Programming Languages: C/C++, Java, Perl, FORTRAN, SQL, and Shell
- Programming domains: scientific computing, kernel, database, networking, driver, and user interfaces
- Parallel Programming: MPI, OpenMP, UPC, Pthread and Globus
- Database Development: Oracle, SQL Server, Informix, and DB2
- Web Service: HTML, XML, RDF, WSDL, SOAP, CORBA and JADE
- Development Tools: GCC, Visual Studio, JBuilder, Eclipse and Rational Rose
- Platforms: Beowulf Cluster (IA32/IA64/AMD), SGI Altix 3000, SUN UltraSPARC, HP and IBM SP RS/6000
- Operating system: Linux, Unix and MS Windows

Certificates

HP-UX Advanced System Administration, 1999

Solaris Advanced System Administration, 1999

Informix Dynamic Server System Administration, 2000

References

Dr. Kirk Cameron (advisor)
Department of Computer Science
Virginia Tech
Blacksburg, VA 24060
(540)231-4238
cameron@cs.vt.edu

Dr. Wu-Chun Feng
Department of Computer Science
Virginia Tech
Blacksburg, VA 24060
(540)231-1192
feng@cs.vt.edu

Dr. Calvin Ribbens
Department of Computer Science
Virginia Tech
Blacksburg, VA 24060
(540)231-6262
ribbens@vt.edu

Dr. Xian-He Sun
Department of Computer Science
Illinois Institute of Technology
Chicago, IL 60616
(312)567-5260
sun@iit.edu