



Ningfang Mi

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RESEARCH INTERESTS

Storage Systems, Multi-tiered Systems, Performance Evaluation, Energy/Power Management, Web Characterization, Simulation, Data Analysis, System Modeling, Scheduling/Load Balancing, Algorithms and Optimization, Computational Geometry.

EDUCATION

Ph.D. in Computer Science May 2009 (expected)
College of William and Mary, Williamsburg, VA, USA
Advisor: Evgenia Smirni

M.S. in Computer Science June 2004
University of Texas at Dallas, Richardson, TX, USA
Advisor: Ovidiu Daescu

B.S. in Computer Science July 2000
Nanjing University, Nanjing, Jiangsu, China
Advisor: Shijie Cai

PROFESSIONAL EXPERIENCE

Research Assistant Aug. 2005 - present
College of William and Mary, VA, USA Supervisor: Evgenia Smirni

Internship Jun. 2007 - Sep. 2007
Hewlett-Packard Laboratories, Palo Alto, CA, USA Mentor: Ludmila Cherkasova

Internship Oct. 2006 - Jan. 2007
Seagate Research, Pittsburgh, PA, USA Mentor: Alma Riska

Teaching Assistant Aug. 2004 - Aug. 2005
College of William and Mary, Williamsburg, VA, USA
CS426 Simulation, CS423 Theory of Computation, CS131 Lab for Concepts in Computer Science, CS301 Software Development

Teaching Assistant Aug. 2002 - Jun. 2004
University of Texas at Dallas, Richardson, TX, USA
CS4340 Computer Architecture, CS6363 Design and Analysis of Computer Algorithm, CS4347 Database Systems

Research Assistant Sep. 2000 - Jun. 2002
Nanjing University, Nanjing, Jiangsu, China
Supervisor: Shijie Cai

AWARDS

2009 The Computer Management Group (CMG) Graduate Fellowship
2008 The Best Paper Award at the ACM/IFIP/USENIX 9th International Middleware Conference (Middleware'08), Leuven, Belgium, 2008, for the paper titled "Burstiness in Multi-Tier Applications: Symptoms, Causes, and New Models"
2008 Incogen Award for Excellence in Scholarship in the Natural and Computational Sciences at the 7th Annual Graduate Research Symposium of the College of William and Mary
2000 The Fujitsu Fellowship for Outstanding Students at Nanjing University
1998 The Luopu Fellowship for Outstanding Students at Nanjing University
1996 The President Fellowship for Freshman at Nanjing University

PUBLICATIONS

Refereed Journal Publications

1. **Ningfang Mi**, Alma Riska, Qi Zhang, Evgenia Smirni, and Eric Riedel, "Efficient Management of Idleness in Systems", to appear, *ACM Transactions on Storage (TOS)*, 2008.
2. Qi Zhang, Ludmila Cherkasova, **Ningfang Mi**, and Evgenia Smirni, "A Regression-Based Analytic Model for Capacity Planning of Multi-Tier Applications", in *Journal of Cluster Computing*, Vol 11, No. 3, pp. 197-211, 2008.
3. Qi Zhang, **Ningfang Mi**, Alma Riska, and Evgenia Smirni, "Performance-Guided Load (Un)Balancing Under Autocorrelated Flows", in *IEEE Transactions on Parallel and Distributed Systems (TPDS)*, Vol. 19, No. 2, pp. 652-665, 2008.
4. **Ningfang Mi**, Qi Zhang, Alma Riska, Evgenia Smirni, and Eric Riedel, "Performance Impacts of Autocorrelated Flows in Multi-tiered Systems", in *Performance Evaluation*, Vol 64, No. 9-12, pp. 1082-1101, 2007. Also presented at *the 26th International Symposium on Computer Performance, Modeling, Measurements, and Evaluation (Performance'07)*, Cologne, Germany, 2007. Acceptance Rate: 20%.
5. Ovidiu Daescu, **Ningfang Mi**, Chan-Su Shin, and Alexander Wolff, "Farthest-point Queries with Geometric and Combinatorial Constraints", in *Computational Geometry: Theory & Applications*, Vol. 33, No. 3, pp. 174-185, 2006.

6. Danny Z. Chen, Ovidiu Daescu, John Hershberger, Peter M. Kogge, **Ningfang Mi**, and Jack Snoeyink, “Polygonal Path Approximation with Angle Constraints”, in *Computational Geometry: Theory & Applications*, Vol. 32, No. 3, pp. 173-187, 2005.
7. Ovidiu Daescu, and **Ningfang Mi**, “Polygonal Path Approximation: a Query Based Approach”, in *Computational Geometry: Theory & Applications*, Vol. 30, No. 1, pp. 41-58, 2005.

Refereed Conference Publications

Acceptance rates are provided when known.

1. **Ningfang Mi**, Alma Riska, Xin Li, Evgenia Smirni, and Erik Riedel, “Restrained Utilization of Idleness for Transparent Scheduling of Background Tasks”, to appear, *the 2009 ACM SIGMETRICS International Conference on Measurement and Modeling of Computer Systems (SIGMETRICS’09)*, Seattle, WA, 2009. Acceptance Rate: 15%
2. **Ningfang Mi**, Giuliano Casale, Ludmila Cherkasova, and Evgenia Smirni, “Burstiness in Multi-Tier Applications: Symptoms, Causes, and New Models”, in *ACM/IFIP/USENIX 9th International Middleware Conference (Middleware’08)*, pp. 265-286, Leuven, Belgium, 2008. Acceptance Rate: 18%. (**Best Paper Award**)
3. **Ningfang Mi**, Giuliano Casale, and Evgenia Smirni, “Scheduling for Performance and Availability in Systems with Temporal Dependent Workloads”, in *the International Conference on Dependable Systems and Networks (DSN’08)*, pp. 336-345, Anchorage, AK, 2008. Acceptance Rate: 25%.
4. **Ningfang Mi**, Alma Riska, Evgenia Smirni, and Erik Riedel, “Enhancing Data Availability through Background Activities”, in *the International Conference on Dependable Systems and Networks (DSN’08)*, pp. 492-501, Anchorage, AK, 2008. Acceptance Rate: 25%.
5. Ludmila Cherkasova, Kivanc Ozonat, **Ningfang Mi**, Julie Symons, and Evgenia Smirni, “Anomaly? Application Change? or Workload Change?”, in *the International Conference on Dependable Systems and Networks (DSN’08)*, pp. 452-461, Anchorage, AK, 2008. Acceptance Rate: 25%.
6. Giuliano Casale, **Ningfang Mi**, and Evgenia Smirni, “Bound Analysis of Closed Queueing Networks with Workload Burstiness”, in *the 2008 ACM SIGMETRICS International Conference on Measurement and Modeling of Computer Systems (SIGMETRICS’08)*, pp. 13-24, Annapolis, MD, 2008. Acceptance Rate: 18%.
7. Giuliano Casale, **Ningfang Mi**, Ludmila Cherkasova, and Evgenia Smirni, “How to Parameterize Models with Bursty Workloads”, in *the First Workshop on Hot Topics in Measurement & Modeling of Computer Systems (HotMetrics’08)*, Annapolis, MD, 2008. Acceptance Rate: 27%.
8. **Ningfang Mi**, Ludmila Cherkasova, Kivanc Ozonat, Julie Symons, and Evgenia Smirni, “Analysis of Application Performance and Its Change via Representative Application Signatures”, in *IEEE/IFIP Network Operations and Management Symposium (NOMS’08)*, pp. 216-223, Salvador, Brazil, 2008. Acceptance Rate: 27%.
9. **Ningfang Mi**, Qi Zhang, Alma Riska, and Evgenia Smirni, “Load Balancing for Performance Differentiation in Dual-Priority Clustered Servers”, in *the 3rd International Conference on the Quantitative Evaluation of Systems (QEST’06)*, pp. 385-394, Riverside, CA, 2006.

10. Qi Zhang, **Ningfang Mi**, Alma Riska, and Evgenia Smirni, “Load Unbalancing to Improve Performance under Autocorrelated Traffic”, in *the 26th International Conference on Distributed Computing Systems (ICDCS’06)*, pp. 20, Lisboa, Portugal, 2006. Acceptance Rate: 14%.
11. Qi Zhang, Alma Riska, **Ningfang Mi**, Erik Riedel, and Evgenia Smirni, “Evaluating the Performability of Systems with Background Jobs”, in *the International Conference on Dependable Systems and Networks (DSN’06)*, pp. 495-504, Philadelphia, PA, 2006. Acceptance Rate: 18%.
12. Ovidiu Daescu, **Ningfang Mi**, Chan-Su Shin, and Alexander Wolff, “Farthest-point Queries with Geometric and Combinatorial Constraints”, in *the Japan Conference on Discrete and Computational Geometry (JCDCG’04)*, pp. 62-75, 2004.
13. Ovidiu Daescu, and **Ningfang Mi**, “Polygonal Path Approximation: a Query Based Approach”, in *the 14th Annual International Symposium on Algorithms and Computation (ISAAC’03)*, pp. 36-46, 2003.

Invited Publications

1. Giuliano Casale, **Ningfang Mi**, and Evgenia Smirni, “Versatile Models of Systems Using MAP Queueing Networks”, to appear, *the IEEE International Parallel and Distributed Processing Symposium (IPDPS), Next Generation Software (NGS) Workshop*, 2008.
2. Evgenia Smirni, Qi Zhang, **Ningfang Mi**, Alma Riska, and Giuliano Casale, “New Results on the Performance Effects of Autocorrelated Flows in Systems”, in *IEEE International Parallel and Distributed Processing Symposium (IPDPS), Next Generation Software (NGS) Workshop*, pp. 1-6, Long Beach, CA, 2007.

Refereed Posters

1. **Ningfang Mi**, Alma Riska, Qi Zhang, Evgenia Smirni, and Eric Riedel, “Efficient Management of Idleness in Systems”, in *the 2007 ACM SIGMETRICS International Conference on Measurement and Modeling of Computer Systems (SIGMETRICS’07)*, pp. 371-372, San Diego, CA, 2007.

Under Submission

1. **Ningfang Mi**, Giuliano Casale, Qi Zhang, Alma Riska, and Evgenia Smirni, “Autocorrelation-Driven Load Control in Autonomic Systems”, submitted.
2. Ludmila Cherkasova, Kivanc Ozonat, **Ningfang Mi**, Julie Symons, Evgenia Smirni, “Automated Detection of Application Performance Anomaly and Change for Effective Capacity Planning of Web Applications”, submitted.

PATENTS

1. “Using Transaction Latency Profiles For Characterizing Application Updates”, *Hewlett-Packard Laboratories*, patent pending with US Patent NO. 200704163.

2. "Using Application Performance Signatures For Characterizing Application Updates", *Hewlett-Packard Laboratories*, patent pending with US Patent NO. 200704162.
3. "Capacity Planning Of Multi-tiered Applications From Application Logs", *Hewlett-Packard Laboratories*, patent pending with US Patent NO. 200704165.
4. "Data Storage Device with Histogram of Idle Time and Scheduling of Background and Foreground Jobs", *Seagate Research*, patent pending, submitted November 2007.

PROFESSIONAL ACTIVITIES

- Student member of ACM and IEEE
- Paper Reviewer of IWQoS'06, EPEW'06, SIGMETRICS'07, QEST'07, IM/FeBID'07, WASA'07, SIGMETRICS'08, ANSS'08, AMSTA'08, Euro-Par'08, IEEE Transactions on Computers

TRAVEL GRANTS

2006 ICDCS Student Travel Support Grant
2007 SIGMETRICS Student Travel Grant
2007 PERFORMANCE Student Travel Grant
2008 CRA Academic Careers Workshop Scholarship
2008 NOMS Student Travel Grant
2008 SIGMETRICS Student Travel Grant
2008 DSN Student Travel Grant
2006-2008 William and Mary Student Activities Conference Fund
2006-2008 William and Mary OGSR/GSA Conference Fund
2007-2008 William and Mary Graduate Student International Travel Fund

SKILLS

Experience: Simulation, Data Analysis, Linux kernel and system programming
Programming languages: C, C++, Java, SQL, HTML, Perl scripts and Linux shell scripts
Tools: Maple, Matlab, Latex and Gluplot
Environments: Windows, Linux and Unix

REFERENCES

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