

Curriculum Vitae
KIRANMAI BELLAM, PhD

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EDUCATION

Ph.D. (2009), Computer Science & Software Engineering
Auburn University, Auburn, AL

M.S. (2006), Computer Science
New Mexico Institute of Mining and Technology, NM

B.S. (2003) Information Technology
Madras University, India

EXPERIENCE

Assistant Professor, Department of Computer Science (Sep 2009 – Present)
Prairie View A & M University, Prairie View, TX

- Responsibilities include instruction at the undergraduate and graduate level, grant writing, research and publications, student advisement, committee work, and other activities as designated

Research Assistant, Computer Science and Software Engineering (Sep 2007– May 2009)
Auburn University, Auburn, AL

- Energy Efficiency and Reliability of Parallel I/O Systems with Disk Mirroring: developed an approach to improve both reliability and energy efficiency of disk systems through disk mirroring and utilization control that enforces disk drives to be operated in safe utilization zones. This is the first utilization-based control scheme that seamlessly integrates reliability with energy saving techniques in the context of fault-tolerant systems.

Research Assistant, Computer Science (Jan 2006 – Aug 2007)
New Mexico Institute of Mining and Technology, Socorro, NM

- Fault tolerance and security management in real-time systems: developed a novel approach to achieve strong fault tolerance and high quality of security in real time systems, and conducted comprehensive performance evaluation to show that the proposed policies significantly improve the reliability and security of real-time systems.

Software Research Assistant (May 2005 – Dec 2005)
Magdalena Ridge Observatory, New Mexico Tech, Socorro, NM

- Software support for Interferometer: designed user interface software for interferometer cameras

RESEARCH GRANTS

Funded Proposals

1. **K. Bellam (PI)**, A. Lodgher and Y. Lu, (2012). *Targeted Infusion Project Grant: Fostering Innovation and Excellence in Computing Systems: Establishing an Innovative Systems Laboratory*, National Science Foundation, Amount: \$296,140.00, (09/01/2012 - 8/31/2015).
2. **K. Bellam (PI)**, (2012). *Fault tolerant and energy efficient storage disk systems*, Department of Energy/Thurgood Marshall College Fund (TMCF), Amount: \$100,000.00, (03/12/2012 - 08/15/2013).
3. **K. Bellam (PI)**, Y. Lu and L. Huang, (2011). *Energy Conservation in Large Scale Storage Disk Systems*, Department of Energy/Thurgood Marshall College Fund (TMCF), Amount: \$100,000.00, (06/2011 – 7/2012).
4. Y. Yang, L. Li and **K. Bellam (Co-PI)**, (2010). *Make College Math Learning Game-Like and Build Bridge Between Math and Engineering*, Department of Energy/Thurgood Marshall College Fund (TMCF), Amount: \$60,000.00, (08/2010 – 7/2011).

Other Proposal Activity

1. **K. Bellam (PI)**, (2013). *Hands-on Humanitarian Research Project Experiences for STEAM Majors*, Department of Energy/Thurgood Marshall College Fund (TMCF), Amount: \$25,000.00
2. **K. Bellam (PI)**, (2012). *Collaborative ITEST scale-up project, Surprising Possibilities Imagined and Realized through Information Technology (SPIRIT)*, National Science Foundation, Amount: \$202,950.00
3. A. Lodgher and **K. Bellam (Co-PI)**, (2012). *RET for Pervasive Use of Mobile Programming in STEM Courses Of Rural High Schools (PUMPSCORS)*, National Science Foundation, Amount: \$ 495,715.00, (Not funded).
4. **K. Bellam (PI)** and A. Lodgher, (2012). *Learning to Learn for Success: Improving Academic Self Efficacy Using A Mobile Social Network Approach (LIASE)*, National Science Foundation, Amount: \$170,038.00, (Not funded)
5. **K. Bellam (PI)**, (2011). *Energy Efficient Parallel Disk Systems*, 3M/Non-Tenured Faculty Grant, Amount: \$45,000, (Not funded)
6. A. Lodgher and **K. Bellam (Co-PI)**, (2011). *Improving Academic Self-Efficacy and Learning to Learn for Success (SELLS): A mobile social network approach*, National Science Foundation, Amount: \$192,634.00, (Not funded).
7. A. Lodgher and **K. Bellam (Co-PI)**, (2010). *III: Small: Fostering Innovation in Information Systems at a HBCU (FIISH): Establishing an Intelligent Systems Laboratory*, National Science Foundation, Amount: \$475,954.00, (Not funded).
8. A. Amarasekara, **K. Bellam (Co-PI)** and X. Peng, (2010). *Collaborative Research: Cyber enhanced Information centric Research and Educational Experiences for STEM Graduate Students (CIREES)*, National Science Foundation, Amount: \$1,195,709.00, (Not funded).

PUBLICATIONS & PRESENTATIONS

Refereed Book Chapter

1. Z. L. Zong, X. Qin, X.-J. Ruan, A. A. Manzanares, and **K. Bellam**, "Improve Energy-Efficiency of Computational Grids", *Handbook of Research on P2P and Grid Systems for Service-Oriented Computing: Models, Methodologies and Applications*, pp 520-541, Jan 2010, ISBN:1-61520-6868; www.igi-global.com/reference/details.asp?id=35584

Refereed Journal Proceedings

2. Y. Yang, L. Li, and **K. Bellam**, "VMathLab, a 3D-Game-Like System for College Math Learning Enhancement," *International Journal of Computer Theory and Engineering* vol. 4, no. 4, pp. 579-583, 2012
3. A. Lodgher, **K. Bellam**, "Teaching Innovation to Graduate Students in Computer Information Systems (CIS)", Communications of the International Information Management Association(CIIMA), 2012
4. M. Nijim, Z. L. Zong, **K. Bellam**, S. Yin, and X. Qin, "Quality of Security Adaptation in Parallel Disk Systems", *Journal of Parallel and Distributed Computing*, Vol, 71, Issue 2, pp. 288-301, Feb. 2011
5. X. Qin, M. Alghamdi, M. Nijim, Z.-L. Zong, X.-J. Ruan, **K. Bellam**, and A. A. Manzanares, "Improving Security of Real-Time Wireless Networks through Packet Scheduling," *IEEE Transactions on Wireless Communications*, vol. 7, no. 9, pp. 3273-3279, Sept. 2008.
6. **K. Bellam**, A. Manzanares, X. Ruan, and X. Qin, "Integrating Security and Reliability in Real-time Embedded Systems", *Journal of Autonomic and Trusted Computing*, Mar 2008.

Refereed Conference Proceedings

7. A. Lodgher and **K. Bellam** "Design and Implementation of CRM Applications using open source SugarCRM", *23rd Annual International Information Management Association (IIMA)*, October 2012
8. M. Nijim, Y. Lee, and **K. Bellam**, "HyBuM: Hybrid Energy Efficient Architecture for Mobile Storage Systems", *9th IEEE International Conference on Information Technology : New Generations*, Las Vegas, Nevada, April 2012
9. A. Lodgher and **K. Bellam**, "Emerging Consumer Technology Applications developed at PVAMU", *IEEE Consumer Communications & Networking Conference (CCNC)*, Las Vegas, Nevada, Jan 2012
10. **K. Bellam** and X. Qin "Reliability Aware Power Conservation Model for Storage Systems", *4th IEEE International Conference on Computer Science and Information Technology (IEEE ICCSIT 2011)*, June 2011(Accepted but not published due to lack of funding for registration and travel)
11. **K. Bellam**, "Effects of Power State Transitions on Reliability and Energy Efficiency of Parallel Storage Systems", *High Performance Computing & Simulation Conference (HPCS 2011)*, July 2011(Accepted but not published due to lack of funding for registration and travel)

12. F. Shen, X. Qin, A. Salazar, A. Manzanares, and **K. Bellam**, "An Energy-Efficient Reliability Model for Parallel Disk Systems," *Sixth Int'l Conf. Information Technology, Las Vegas, Nevada*, Apr. 2009.
13. X.-J. Ruan, A. Manzanares, **K. Bellam** and X. Qin, "DARAW: A New Write Buffer to Improve Parallel I/O Energy-Efficiency," *Proc. 24th Annual ACM Symposium on Applied Computing, Honolulu*, Hawaii, March 2009.
14. A. Roth, A. Manzanares, **K. Bellam**, M. Nijim, and X. Qin, "Energy Conservation for Real-Time Disk Systems with I/O Burstiness," *Proc. IEEE Int'l Workshop Next Generation Autonomous Storage and High Performance Computing*, St. Thomas, Virgin Islands, Aug. 2008.
15. M. Nijim, Z.-L. Zong, **K. Bellam**, X.-J. Ruan and X. Qin, "Security-Aware Cache Management for Cluster Storage Systems," *Proc. the 17th Int'l Conf. Computer Communications and Networks (ICCCN)*, St. Thomas, Virgin Islands, Aug. 2008. (Acceptance Rate: 29%)
16. **K. Bellam**, A. Manzanares, X. Ruan, X. Qin, and Y.-M. Yang, "Improving Reliability and Energy Efficiency of Disk Systems via Utilization Control," *Proc. IEEE Symposium on Computers and Communications (ISCC'08)*, Marrakech, Morocco, July 2008. [Best Paper Award]
17. A. Manzanares, **K. Bellam**, and X. Qin, "A Prefetching Scheme for Energy Conservation in Parallel Disk Systems," *Proc. NSF Next Generation Software Program Workshop*, April 2008.
18. **K. Bellam**, A. Manzanares, and X. Qin, "Improving Reliability and Energy Efficiency of Disk Systems," *Proc. 46th ACM Southeast Conference*, Auburn, Alabama, March 2008.
19. Z.-L. Zong, **K. Bellam**, X.-J. Ruan, A. Manzanares, X. Qin, and Y.-M. Yang, "A Simulation Framework for Energy-efficient Data Grids," *Proc. Winter Simulation Conference*, Washington, D.C., Dec. 2007.
20. Z.-L. Zong, X. Qin, M. Nijim, X.-J. Ruan, **K. Bellam**, and M. Alghamdi, "Energy-Efficient Scheduling for Parallel Applications Running on Heterogeneous Clusters", *Proc. International Conference on Parallel Processing*, Xi'an, China, September 2007. (Acceptance Rate: 25%)
21. X.-J. Ruan, X. Qin, M. Nijim, Z.-L. Zong, and **K. Bellam**, "An Energy-Efficient Scheduling Algorithm Using Dynamic Voltage Scaling for Parallel Applications on Clusters," *Proc. 16th IEEE Int'l Conference on Computer Communications and Networks (ICCCN)*, Honolulu, Hawaii, Aug. 2007. (Acceptance Rate: 29%)
22. **K. Bellam**, R. K. Vudata, X. Qin, Z.-L. Zong, M. Nijim, and X.-J. Ruan, "Interplay of Security and Reliability using Non-Uniform Checkpoints," *Proc. 16th Int'l Conference on Computer Communications and Networks (ICCCN)*, Honolulu, Hawaii, Aug. 2007. (Acceptance Rate: 29%) [NMT Student Travel Award]
23. W. Luo, **K. Bellam**, and X. Qin, "Reliability-Driven Scheduling of Periodic Tasks in Heterogeneous Real-Time Systems," *Proc. the 4th IEEE International Symposium on Embedded Computing (SEC'07)*, Ontario, Canada, May 2007
24. **K. Bellam**, Z. Zong, M. Alghamdi, M. Nijim, and X. Qin, "Integrating Fault Recovery and Quality of Security in Real-time Systems," *Proc. IEEE International Symposium on Ubisafe Computing*, Ontario, Canada, May 2007. [Nokia Travel Award]

25. X. Qin, M. Alghamdi, M. Nijim, Z.-L. Zong, and **K. Bellam**, "Scheduling of Periodic Packets in Energy-Aware Wireless Networks," *Proc. the 26th IEEE Int'l Performance Computing and Communications Conf. (IPCCC'07)*, New Orleans, Louisiana, April 2007. (Acceptance Rate: 37%)

Work in Progress

26. **K. Bellam**, "Interplay of Fault Recovery and Quality of Security in Real-time Systems." to be submitted to IEEE Transactions on Systems Man & Cybernetics, Part A..
27. **K. Bellam**, "Improving Energy Efficiency and Reliability of Disk Systems," to be submitted to IEEE Transactions on Computers.
28. **K. Bellam**, "Improving Energy Efficiency and Reliability of Parallel I/O Systems with Disk Mirroring," to be submitted to the IEEE International Performance Computing and Communications Conference (IPCCC)
29. **K. Bellam**, "Effects of Power State Transitions on Reliability of Energy Efficient Storage Systems" to be submitted to the IEEE International Parallel and Distributed Processing Symposium (IPDPS)
30. **K. Bellam**, "Reliable Popular Data Concentration," to be submitted to the International Conference on Parallel Processing.

Invited Talks/Conference Talks

1. **K. Bellam** (2013), Cloud Based Data Backup of DFDR's for Emergency and Safety protocols, Plenary Session Keynote Speaker - International Conference on Safety by Design, Kerala, India
2. **K. Bellam** (2012), NCWIT- Recruitment and Engagement Resources, National Center for Women in Information technology Summit, Chicago, IL
3. **K. Bellam** (2011), Power Aware High Performance Storage Systems, Computer Science Industry Advisory Committee Meeting, PVAMU, Prairie View, TX
4. **K. Bellam** (2011), Women in Computing, Building Computing Aptitude, Confidence, and Engagement for Students (Computing ACES) workshop, Prairie View, TX
5. **K. Bellam** (2010), Using Second life for Academia, *Exploring Innovative Practices in Instruction in Math and Science - Royal Academy for Math and Science*, Prairie View, TX
6. **K. Bellam** (2009). Improving Energy Efficiency and Reliability of Disk Systems, *Department of Computer Science, University of Wisconsin, Milwaukee, WI.*
7. **K. Bellam** (2009). Effects of Power State Transitions on the Energy Efficiency of the Large Scale Storage Systems, *Department of Computer Engineering, Kettering University, Flint, MI.*
8. **K. Bellam** (2009). Improving Energy Efficiency and Reliability of Parallel I/O Systems with Disk Mirroring, *Department of Computer Science, Dakota State University, Madison, SD.*
9. K. Bellam, A. Manzanares, and X. Qin, (2008). Improving Reliability and Energy Efficiency of Disk Systems, *Proc. 46th ACM Southeast Conference*, Auburn, Alabama
10. **K. Bellam**, Z. Zong, M. Alghamdi, M. Nijim, and X. Qin, (2007). Integrating Fault Recovery and Quality of Security in Real-time Systems, *Proc. IEEE International Symposium on Ubisafe Computing (Ubisafe'07)*, Ontario, Canada.

11. W. Luo, **K. Bellam**, and X. Qin, (2007). Reliability-Driven Scheduling of Periodic Tasks in Heterogeneous Real-Time Systems, *Proc. IEEE International Symposium on Ubisafe Computing (Ubisafe'07)*, Ontario, Canada.
12. **K. Bellam**, R. K. Vudata, X. Qin, Z.-L. Zong, M. Nijim, and X.-J. Ruan, (2007). Interplay of Security and Reliability using Non-Uniform Checkpoints, *Proc. 16th Int'l Conference on Computer Communications and Networks (ICCCN)*, Honolulu, Hawaii.
13. X.-J. Ruan, X. Qin, M. Nijim, Z.-L. Zong, and **K. Bellam**, (2007). An Energy-Efficient Scheduling Algorithm Using Dynamic Voltage Scaling for Parallel Applications on Clusters, *Proc. 16th Int'l Conference on Computer Communications and Networks (ICCCN)*, Honolulu, Hawaii

TEACHING ACTIVITIES

Undergraduate Courses

1. COMP 1013: Introduction to Computer Science
2. COMP 1021: Introduction to Computer Science Lab
3. COMP 1214: Computer Science I and Computer Science Laboratory I
4. COMP 3113: Object-Oriented Analysis & Design
5. COMP 3223: Software Engineering
6. COMP 4072: Senior Design Project I
7. COMP 4123: Computer Networks
8. COMP 4133: Formal Language & Automat

Graduate Courses

1. CINS 5013: Information resources Management
2. COMP 5043: Data Communication Networks
3. COMP 5133: Operating Systems

STUDENT SUPERVISION

Master's Students in Progress

1. Kendria Boston - Expected completion, May 2014
2. Martin Ilboudo - Expected completion, May 2014
3. Rahman Mahmudur - Expected completion, May 2014
4. Denver Serieux - Expected completion, May 2014
5. Akshata Patel - Expected completion, May 2014

Master's Students Completed

1. Komal Patolia (2013). Dynamic Database Driven Web Form Creation and Data Collection System, M.S., Computer Science.
2. Jason Mitchell (2012). Hand Writing to Text Tool Bar for Internet Explorer Browser, M.S., Computer Information Systems.

3. Dharaben Patel (2012). *E-Recipe Application for Android Smartphone*, M.S., Computer Science.
4. Digrajsinh Jala. (2011). *Greeting/Quote Sender Application for Android Platforms*, M.S., Computer Science.
5. Dhimant Ruparelia. (2011). *Stock Market forecasting system using Id3 algorithm for Android platforms*, M.S., Computer Science.
6. Itebite Agboneni. (2011). *Cideon Conversion Engine for SAP Product Lifecycle Management*, M.S., Computer Science.
7. Gary Croft. (2012). *Using Tablet Computers to Increase Collaboration in Education*, M.S., Computer Information Systems
8. Ibrahim Momoh. (2012). *A Cloud Based Web Application Development Lab*, M.S., Computer Information Systems
9. Maulikkumar Patel. (2012). *Cross Platform Mobile Application for PVAMU*, M.S., Computer Science.

PROFESSIONAL ACTIVITIES

Professional Memberships

- Association of Computing Machinery
- Upsilon Pi Epsilon
- Society of Women Engineers
- National Center for Women in Information Technology

Journal/Conference Reviewer

- IEEE Transactions on Systems Man & Cybernetics, Part A (2010 - present)
- An International Journal of Computers & Electrical Engineering (2011-present)
- International Journal of High Performance Systems Architecture (2012 - present)
- International Conference on Information Technology- New Generations (ITNG) (2012)
- International Conference on Advances in System Simulation (2010 - 2012)

Conference Roles

- Advisory Committee, International Workshop on Computer Aided Engineering and Robust Design (IWCAERD) (2013)
- Session Co-Chair, International Conference on Safety by Design (ICSBD) (2013).
- Session Co-Chair, International Conference on Composites/Nano Engineering (ICCE-21) (2013)
- International Advisory Committee, IEEE International Conference of Radar,

Communication and Computing. (2012)

- Track Chair and Program Committee member, 9th International Conference on Information Technology - New Generations (ITNG) (2012)
- Technical Program Committee, The Third International Conference on Advances in System Simulation, SIMUL 2011 (2011)
- Technical Program Committee, The Second International Conference on Advances in System Simulation, SIMUL 2010 (2010)

Grant Proposal Reviewer

- National Center for Women in Information technology (NCWIT) Seed Fund
- National Center for Women in Information technology (NCWIT) REU-IN-A-BOX

SERVICE & ADMINISTRATIVE ACTIVITIES

Department Level Service

- Department Representative, Panther land Day, (2009-2012)
- Member, Faculty Search Committee, (2010)
- Member, Distance Learning for Master of Science in Computer Information Systems Committee, (2010)
- Department Representative, 8th , 9th and 10th Annual Major's fair, (2009 - 2011)
- Member, Student Appeals Panel, (2011)
- Member, Graduate Curriculum Committee, (2011-present)
- Member, Exxon Scholarship Committee, (2010)
- Member, PVAMU HBCU Cloud Computing Hub, (2010-2011)

College Level Service

- Chaperone, Women of Color STEM Conference, Dallas, TX (2009 , 2011 and 2013)
- Member, CECSTR TI student Scholarship Committee (2010 - present)
- Member, Department Head of Engineering Technology Search committee, (2011 - present)
- Member, 3 Post-Docs (Biofuels, Wind and Energy & Environment) for CEES Center Search Committee, (2012)
- Member, Manufacturing and Mechanical Design Faculty Search Committee, (2012 - present)
- Faculty Mentor (undergraduate Students), CECSTR TI Scholars
- Faculty Advisor, Upsilon Pi Epsilon Student Organization, (2012 - present)
- Faculty Co-Advisor, Association Of Computing Machinery Student Organization, (2012 - present)
- Member, International Study Committee, (2012 - present)
- Faculty Advisor, Society of Women Engineers, (2013 – present)

- Chaperone, Society of Women Engineers Conference, Baltimore, MD (2013)

University Level Service

- Judge, 2nd and 3rd Annual STEAM Research Symposium (2011-2012)
- Faculty Senator, PVAMU Faculty Senate, (2010-present)

Community Level Service

- University Representative, Women of Color STEM Conference, Resume Workshop, Dallas, TX (2010)
- Co-Chair, Recruitment and Engagement Academic Alliance Committee, National Center for Women in Information technology, (2011-present)
- Outreach Projects with Royal ISDs, A High School Redesign Program – Funded by Bill and Melinda gates Foundation and TMCF (2009 - 2011)

Honors & Awards

- Conference Travel Award, National Center for Women in Information technology Summit, (2010,2012, 2013)
- Workshop Travel Award, NSF Grant Writing Workshop. (2010)
- Best Paper Award, IEEE Symposium on Computers and Communication, (2008)
- Nokia Student Travel Award, IEEE-AINA'07, (2007)
- Travel Award, Academic Affairs, New Mexico Tech, (2007)
- New Mexico Tech 2007, Summer Graduate Student Travel Grant, (2007)
- Travel Award, Academic Affairs, New Mexico Tech, (2007)
- New Mexico Tech 2006 Spring Graduate Student Travel Grant,(2007)