

Ebrahim S. Khosravi, Ph.D.

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Present Position:

Professor & Chair

Department of Computer Science, Collage of Engineering & Computer Science,
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Summary

I obtained my Ph.D. degree in Computer Science, with an emphasis in high performance computing and a minor in high energy physics from Louisiana State University, and I have a distinguished record of excellence in teaching and research activities. Currently, I am a full Professor and chair of the Department of Computer Science. I have taught both undergraduate and graduate courses in all areas of Computer Science with consistently high student ratings. I have published several research articles, and obtained continuous federal and state level support for my research. I have served on many review panels and on numerous committees. As an administrator, I have fostered excellence in research and teaching as well as in other disciplines including other obligations such as strategic plans, budgets, and accreditation processes.

Areas of expertise/experience:

- Computer Science: research programs such as Bioinformatics, Cyber security, High Performance Computing (HPC), robotics, and network.
- Administration: Assessment Evaluation, Accreditation Retention, Recruitment, Outreach, raising funds, strategic plans, and budgets.

Technologies

- Languages: C/C++, Java, UML, Pascal, Perl, HTML, ADA, SQL, and FORTRAN
- Tools: Rhapsody, Dimensions, DOORS, Greenhills Multi
- Platforms: SUN, VAX, HP, IBM compatibles, and Macintosh
- Operating Systems: Integrity 178B O/S, UNIX, DOS, Mac O/S, Windows

Education and Training:

- Ph. D. in Computer Science, Louisiana State University, 1998

Research and Professional Experience:

- Chairman, Computer Science Department, Southern University, Mar. 2003 -- current.
- Professor, Computer Science Department, Southern University, Aug. 2007 -- current.
- Senior Research Associate, Louisiana State University, May 1989 – Aug. 1997.
- Visiting Researcher, KEK Laboratory, Japan, May, 1994 – Aug. 1994.
- Visiting Researcher, Brookhaven National Laboratory, April 1992 – June 1992.

- Visiting Researcher, DESY Laboratory, Hamburg, Germany. Mar. 1991 – Aug. 1991.
- Visiting Researcher, Argonne National Laboratory, Aug. 1989 – Oct. 1989.
- Visiting Researcher, Ohio State University, June, 1989 – Dec. 1989.

Selected Publications:

- Shuju Bai, Ebrahim Khosravi, and Seung-Jong Park. 2013. An MPI-enabled MapReduce Framework for Molecular Dynamics Simulation Applications. 2013 IEEE BIBM, pp. 1-3.
- Jin Niu, Shuju Bai, Ebrahim Khosravi, and Seung-Jong Park. 2013. A Hadoop Approach to Advanced Sampling Algorithms in Molecular Dynamics Simulation on Cloud Computing. 2013 IEEE BIBM, pp. 452-455.
- Maritza Smith-Romero, Jin Niu, Alvin Allen, Ebrahim Khosravi, and Shuju Bai. 2013. Implementing Replica Exchange Molecular Dynamics Using Work Queue. 2013 IEEE BIBM, pp. 63-64.
- Li, Zhongwei, Ebrahim Khosravi, and Shuju Bai. 2011. Interaction Simulation of Lipoxxygenase with Arachidonate Acid Using NAMD. 2011 IEEE BIBM Workshops, pp.973, doi: 10.1109/BIBMW.2011.6112525.
- Mingmin Bai, Ebrahim Khosravi, and Shuju Bai. 2011. Docking Arachidonic Acid into Human 5/12-Lipoxxygenase Using ICM. 2011 IEEE BIBM Workshops, pp. 974, ISBN: 978-1-4577-1612-6, doi:10.1109/BIBMW.2011.6112526.
- Jialin Lei, Bin Chen, Shengmin Guo, Kaiyang Wang, Liuxi Tan, Ebrahim Khosravi, Jinyuan Yan, Selva Vennila Raju, and Shizhong Yang, “*Structural and mechanical stability of dilute yttrium doped chromium*”, *APL* 14 January 2013
- Jialin Lei, Bin Chen, Shengmin Guo, Kaiyang Wang, Liuxi Tan, Ebrahim Khosravi, Jinyuan Yan, Selva Vennila Raju, and Shizhong Yang, *Structural and mechanical stability of dilute yttrium doped chromium*, *APL* 2012
- S. Yang, G. L. Zhao, and E. Khosravi, “*Dioxygen adsorption and dissociation on nitrogen doped carbon nanotubes from first principles simulation*”, in Carbon Nanotubes - from Research to Applications, Chapter 2, pp27 ~ 36, INTECH, Rjeka, Croatia, 2011.
- Tianchuan Du, Neelima Rama, Shuju Bai, and Ebrahim Khosravi. 2010. Using Computational Method to Identify the Binding Site of 8R-lipoxxygenase for Arachidonic Acid. 2010 IEEE BIBM Workshops, pp. 831-832, doi:10.1109/BIBMW.2010.5703930
- Shuju Bai, Tianchuan Du, and Ebrahim Khosravi. 2010. Applying Internal Coordinate Mechanics to Model the Interactions Between 8R-Lipoxxygenase and Its Substrate. BMC Bioinformatics 2010, 11(S6):S2. Doi: 10.1186/1471-2105-11-S6-S2. NIH PMID: 20946603.
- Tianchuan Du, Shuju Bai, and Ebrahim Khosravi. 2010. Docking Arachidonic Acid to 8R-Lipoxxygenase Using Internal Coordinate Mechanics. ACM-BCB 2010, pp445-447.
- S. Yang, G. L. Zhao, and E. Khosravi, “*First principles studies of nitrogen doped carbon nanotubes for dioxygen reduction*”, *Journal of Physical Chemistry C* 114, 3371 (2010).
- S. Yang, S. Guo, S. Bai, E. Khosravi, G. Zhao, and D., “*Doped C₆₀ study from first principles simulation*”, *Journal of Superconductivity and Novel Magnetism* 23, 877 (2010).
- Shuju Bai and Ebrahim Khosravi. 2007. Object Aggregation and Aggregation-tree in Metadata Extraction from SVG Images. *International Journal of Mathematics and Computer Science*, 2(2007), No. 1, 83-94.
- S. Bai, A. Salam, and E. Khosravi, *Revised Aggregation-tree Used in Metadata Extraction from SVG Images*, 2006 International Conference on Data Mining (DMIN06), I, 325, 2006.

- E. Khosravi and B. M. Tyson, *Increasing Security in Mobile Ad Hoc Networks by Incentives to Cooperate and Secure Routing*, Proceeding of the 2006 International Conference on Security and Management (SAM'06), I, 141, June 2006.
- S. Bai, A. Salam, and E. Khosravi, *Metadata Extraction from SVG Images Using A-Tree*, Proceeding of the 2005 International Conference on Data Mining, 159 (DMIN2005), June, 2005, Las Vegas, USA.
- E. Khosravi and J. B. Jones, *Parallelization and implementation of approximate root isolation for nonlinear general system*, Proceeding of the International Conference on Parallel and Distributed Processing Techniques and Application (PDPTA), II, 772, J 2001.
- E. Khosravi, *A Traffic Management to Reduce the Network Congestion*, Proceeding of the World Multiconference on Systemics, Cybernetics, Informatics (SCI2001), XII, 496, 2001.
- E. Khosravi, *Communication in Distributed system and Network using Microkernels*, Proceeding of the 45th International Conference on System Science and International Society for the Systems Sciences (ISSS), IV, 196, July 2001.

Selected Proposals:

- Title: *An Experiment to Study Terrestrial Gamma Flashes and the Role of Energetic Particle Acceleration in Lightning and Severe Weather Events*. (PI), Source of Support: NASA, Award Amount: \$424,751, Period Covered: 7/1/2015 -7/30/2018.
- Title: *Interagency Cooperative Endeavor Agreement*. (PI), Source of Support: LALED, Award Amount: \$2,500,000, Period Covered: 1/1/2016 -1/30/2026.
- Title: *RII Track-1: Consortium for Innovation in Manufacturing and Materials (CIMM)* (C0- PI), Source of Support: NSF, Award Amount: \$1,715,000, Period Covered: 7/1/2015 -7/30/2020.
- Title: *Mobile deployment and database development for LDWF*. (PI), Source of Support: STATE, DWLF, Award Amount: \$24,751, Period Covered: 5/1/2015 -5/30/2016.
- Title: *Design and Validation of a Novel Zeolite for Efficient CO₂ Capture* (Co-PI), Source of Support: DOE, Award Amount: \$250,000, Period Covered: 6/1/2014 -- 6/30/2017.
- Title: *Quality Undergraduate Experiments in Systems and Technology (QUEST) - A Center for Underrepresented Students*. (PI), Source of Support: NSF, Award Amount: \$335,416, Period Covered: 7/1/2014 -- 7/30/2018.
- Title: *An Integrated Study on a Novel High Temperature High Entropy Alloy* (Co-PI), Source of Support: DOE, Award Amount: \$200,000, Period Covered: 10/1/2013 - 9/30/2015
- Title: *An Integrated Study on the Novel Thermal Barrier Coating for Nb-based High Temperature Alloy* (Co-PI) , Source of Support: DOE, Award Amount: \$200,000 , Period Covered: 10/1/2011 -- 5/30/2014
- Title: *Developing a High Performance Data Processing Laboratory*” (Co-PI) Source of Support BOR Award Amount: \$56,242.00, Period Covered: 06/01/2012-05/31/2014.
- Title: *Novel Nano-size Oxide Dispersion Strengthened Steels Development through Computational and Experimental Study* (Co-PI), Source of Support: DOE, Award Amount: \$200,000, Period Covered: 10/1/2012 -- 9/30/2015.
- Title: *Computational Design and Experimental Validation of New Thermal Barrier Systems* (Co-PI), Source of Support: DOE, Award Amount: \$504,863, Period Covered: 10/1/2010 -- 9/31/2014.

- Title: *MRI: Acquisition of A High Performance Computing Cluster for Integrated Research*. (PI), Source of Support: NSF Award Amount (or Annual Rate): \$1,867,989, Period Covered: 9/15/2010 -- 9/14/2013.
- Title: *Molecular Modeling the Interaction of Domain I of gK and First Segment with Membrane* (Co-PI), Source of Support: NIH/INBRE, Award Amount: \$16,497, Period Covered: 6/1/2011 -- 12/31/2011.
- Title: *Molecular Dynamics Simulation on the Interaction between Domain I of gK and Extracellular Domain IV of UL20* (Co-PI), Source of Support: NIH/INBRE, Award Amount: \$50,000, Period Covered: 10/1/2011 -- 4/30/2012.
- Title: *Integrate Parallel and Distributed Computation Program into Current Computational Courses at Southern University* (PI), Source of Support: NSF Award Amount: \$3,000, Period Covered: 10/1/2012 -- 9/30/2013.

Presentations:

- Shuju Bai, Ebrahim Khosravi, and Seung-Jong Park. 2013. An MPI-enabled MapReduce Framework for Molecular Dynamics Simulation Applications. IEEE BIBM 2013 Conference, Dec. 18-21, Shanghai, China.
- Jin Niu, Shuju Bai, Ebrahim Khosravi, and Seung-Jong Park. 2013. A Hadoop Approach to Advanced Sampling Algorithms in Molecular Dynamics Simulation on Cloud Computing. IEEE BIBM 2013 Conference, Dec. 18-21, 2013, Shanghai, China.
- Maritza Smith-Romero, Jin Niu, Alvin Allen, Abraham Khosravi, and Shuju Bai. 2013. Implementing Replica Exchange Molecular Dynamics Using Work Queue. IEEE BIBM 2013 Conference, Dec. 18-21, 2013, Shanghai, China.
- Jin Niu, Shuju Bai, Ebrahim Khosravi, and Seung-Jong Park. 2013. Performance of REMD on cloud computing platform, MCBIOS conference, April 5-6, 2013, Columbia, Missouri.
- Shuju Bai and Seung-Jong Park. 2013. Modeling Protein-Substrate Interactions Using Computational Approaches. The 11th LBRN Annual Meeting, Jan. 18-19, 2013, Ruston, LA.
- Zhongwei Li, Ebrahim Khosravi, and Shuju Bai. 2013. Simulating Protein-Substrate Interactions in 8R-Lipoxygenase Using NAMD. The 11th LBRN Annual Meeting, Jan. 18-19, 2013, Ruston, LA.
- Zhongwei Li, Ebrahim Khosravi, and Shuju Bai. 2011. Interaction Simulation of Lipoxygenase with Arachidonate Acid Using NAMD. IEEE BIBM 2011 Conference, Nov. 12-15, 2011, Atlanta, GA.
- Mingmin Bai, Ebrahim Khosravi, and Shuju Bai. 2011. Docking Arachidonic Acid into Human 5/12-lipoxygenase Using ICM. IEEE BIBM 2011 Conference, Nov. 12-15, 2011, Atlanta, GA.
- Tianchuan Du, Khosravi, Ebrahim, and Shuju Bai. 2011. 5-lipoxygenase Homology Modeling Suggests a Docking Site for Arachidonic Acid. MSBIOS 2011 Conference, Apr 1- 2, 2011, College Station, TX.
- Zhongwei Li, Ebrahim Khosravi, and Shuju Bai. 2011. Interaction Simulation of 8R-Lipoxygenase with Arachidonic Acid Using NAMD. MSBIOS 2011 Conference, Apr 1- 2, 2011, College Station, TX.
- Tianchuan Du, Neelima Rama, Ebrahim Khosravi, and Shuju Bai. 2011. Modeling Interactions of 8R-lipoxygenase and Arachidonic Acid Using Internal Coordinate Mechanics. Louisiana Academy of Sciences 2011 Conference, Feb 26, 2011, Monroe, LA.
- Zhongwei Li, Ebrahim Khosravi, and Shuju Bai. 2011. Homology Modeling of Arachidonate 5-lipoxygenase Structure Using ICM. Louisiana Academy of Sciences 2011 Conference, Feb 26, 2011, Monroe, LA.

- Tianchuan Du, Neelima Rama, Shuju Bai, and Ebrahim Khosravi. 2010. Using Computational Method to Identify the Binding Site of 8R-Lipoxygenase for Arachidonic Acid. IEEE BIBM 2010 Conference, Dec. 18-22, 2010. Hong Kong, China.
- Shuju Bai, Tianchuan Du, and Ebrahim Khosravi. 2010. Docking Arachidonic Acid to 8R-Lipoxygenase with Internal Coordinate Mechanics. Super Computing 2010. Nov. 13-19, 2011, New Orleans, LA, USA.
- Tianchuan Du, Shuju Bai, and Ebrahim Khosravi. 2010. Docking Arachidonic Acid to 8R-Lipoxygenase Using Internal Coordinate Mechanics. ACM International Conference on Bioinformatics and Computational Biology. August 2-4, 2010. Niagara Falls, NY, USA.
- APS March Meeting, S. Yang, E. Khosravi, and G.L. Zhao, Nitrogen doped carbon nanotubes for dioxygen reduction from ab initio simulations, Portland, Oregon, 2010.
- 84th LAS Annual Conference: K. Lyles, S. Bai, E. Khosravi, and S. Yang, Modeling a gK protein fragment with a POPE Membrane, Alexandria, Louisiana, February, 2010.
- MGCMM2010, G.L. Zhao, S. Yang, and E. Khosravi, Large-Scale First Principles Computations of Nitrogen Doped Carbon Nanotubes for Dioxygen Reduction, BR, LA.

Synergistic Activities:

- Committee Communication In Computer CIC, June, 2002 – current.
- Chair, Architecture committee, PDPTA, June, 2001 – current.
- Network and Communication, CS Department/LONI, Fall 1998/2006 – current.
- Graduate council, CS Department, Fall 1998 – current.
- Curriculum, CS Department, Fall 1999 -- current.

Current membership in honor societies and professional organizations:

- Association for Computing Machinery (ACM), Dec 2005 to Present
- American Mathematical Society, Dec 2005 to Present
- International Society for the Systems Science (ISSS)
- Upsilon Pi Epsilon, Honor society for computer science (UPE).
- ZD PC Magazine Charter

Honors and awards:

- Excellence in Research Mentoring (SREU 2006)
- Best Teacher Award (2000)

Collaborators within Last 48 Months:

M. Diack, S. J. Park, G. L. Zhao, S. M. Guo, K. G. Konsoulas, S. Bai, M. Newcomer, H. Mohamadian, M. Stubblefield, D. Jerro, A. Salam.

Reviewer for Journals:

2007- Present, Computing, Communications and Control Technologies (CCCT)

2009 - 2011 Complexity, Informatics and Cybernetics (IMCIC)

2010, Information Systems Analysis and Synthesis (ISAS)

Thesis Advisor and Postgraduate-Scholar Sponsor:

Mingmin Bai (2013)

Corey Baham (2011)

Kimberlee Lyles (2010)
Denpang Yin, Dawn Rochele Richardson (2008)
Bharat K. Eapi, Bahru Mossa (2007)
Kavitha Challa, Yavuz Selim Atmaca (2005)
Aditya Errabelli, Ramu Garapati, Manoj Santhinik Thanam (2004)
Brandy Michelle Tyson, Yan Pu, Qinglin Li (2003)

References:

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