Curriculum Vitae

S. Masoud Sadjadi

RESEARCH AREA

Distributed Systems, Software Engineering, Middleware Systems, Autonomic Computing, High-Performance Computing, Grid Computing, Cloud Computing, Pervasive Systems, Mobile Computing.

EDUCATION

Degree	Institution	Field	Dates
Ph.D.	Michigan State University	Computer Science	01/00 – 08/04
M.S.	Azad University (Tehran)	Software Engineering	09/95 – 02/99
B.S.	University of Tehran	Hardware Engineering	09/90 – 08/95

AWARDS

- Recipient of the First TeraGrid Pathway Fellowship for the pioneering work on the Grid Enablement of Scientific Applications on TeraGrid, 2009.
- Excellence in Mentoring Award, School of Computing and Information Sciences, Florida International University, 2007.
- IBM Shared University Research (SUR) Award, 2005.
- IWQoS 2004 Best Student Paper Award, the Twelfth IEEE International Workshop on Quality of Service (IWQoS 2004), Montreal, Canada, 2004.
- Outstanding Graduate Student Award, Department of Computer Science and Engineering, Michigan State University, 2004.
- Highest Score in 2001 Qualifying Examination, Department of Computer Science and Engineering, Michigan State University, 2001.

EMPLOYMENT

Aug. 2004 – present: Assistant Professor, School of Computing and Information Sciences, Florida International University

RESEARCH SUMMARY

The main focus of my multi-disciplinary, and internationally spanned research lies in *automating the information technology* and providing *the right level of abstraction* for scientists and engineers of different disciplines (e.g., meteorologists, biologists, physicists, chemists, bio-medical engineers, mechanical engineers, etc.) to be able to perform their research in their own areas, where they are more comfortable, without the need to be distracted by and in some cases lost in the details of information technology. Currently,

successful scientists and engineers who are working on complex problems are those who are also up-to-speed with the latest advances in information technology in general and specifically are experts in high performance computing; an area characterized as moving target.

I vision a day when scientists and engineers can perform their experiments in a timely manner without the need to constantly spend (or waste) their time on learning the latest high-performance computing technologies available out there. To make this vision a reality, as a PI or Co-PI, I have been involved in several small and large sponsored research projects in the past five years. To promote this vision through training new generations of engineers and scientists, I have included an educational and workforce training component in almost all my research projects. This new workforce can benefit from the results of my research and become more efficient in their areas of research by getting less and less involved with the unnecessary details of information technology.

Specifically, to provide *the right level of abstraction* to the meteorologists who conduct research in hurricane forecasting and to the weather officers who run weather simulations in a real-time fashion four times a day, we have developed a Hurricane Mitigation Portal that allows the weather researchers and officers to spend their time on the science part of weather research and forecasting, rather than on tedious and error-prone tasks of compiling, installing, and configuring the forecasting software as is currently the case. In addition, the portal enables the system administrators to easily add or remove computational resources (e.g., clusters, supercomputers, and virtual machines) that cab be allocated dynamically to the various simulation tasks based on preplanned high-level policies, or pressing emergent needs.

This portal is supported by our self-managing and Cluster-, Grid-, and Cloud-enabled workflow managers, meta-schedulers, resource managers, and application profilers. Unlike other approaches, our research in workflow management investigates distributed algorithms and peer-to-peer protocols that dynamically partition, map, and execute workflows and their corresponding subflows while providing cross-layer fault-tolerant and quality-of-service. We have a prototype based on BPEL and JSDL. Our research in meta-scheduling investigates interoperable protocols that allow existing meta-schedulers to interact. We have a prototype that enables interoperation of IBM's TDWB, BSC's eNanos, and Globus' GridWay. We have also developed an application-agnostic methodology to mathematically model and predict the execution time of long-running applications. We have a primitive but highly usable model for one of the most popular Weather and Research Forecasting (WRF) simulators that quickly estimate the execution time of WRF on currently available clusters.

In summary, my research has been supported by governmental, industrial, academic organizations (e.g., NSF, IBM, Kaseya, TeraGrid, and FIU) for a total of $4.7 million ($1.7M as PI and $3M as Co-PI). I have published 61 papers (3 book chapters, 9 journal papers, 49 conference/workshop proceeding papers) mostly in premier journals and conferences in my research area. I have presented my research to the community through 34 conference and invited lecture presentations and also through numerous poster

presentations. Currently, my students and I are actively collaborating and publishing papers with researchers from eight different countries (Argentina, Brazil, China, France, India, Japan, Mexico, and Spain).

PUBLICATIONS SUMMARY

I have 61 publications in total: 3 book chapters, 9 journal papers, 49 conference/ workshop proceeding papers, and numerous posters. Note that, in computer science, conferences are usually at least as important as journals. On 37 of these papers, I am either the first or second author of the paper. Some papers appeared in top ranked CS conferences in their respective areas (i.e., very competitive with 3 or more rigorous reviews per paper; e.g., ICAC, ICDCS, IWQoS, ICSOC, CCGrid, etc.) and low acceptance rate (e.g., 16.23%, 17%, 17.7%, 20.4%, 21%, etc.). Some of my journal articles were published in IEEE Computer, IEEE Transactions on Computers, Elsevier Computer Networks Journal, Elsevier Future Generation Computer Systems, Journal of Systems and Software, IEEE Transactions on Network and System Management, and Elsevier Software, Practice and Experience. According to Google Scholar, my article on Composing Adaptive Software in IEEE Computer was cited 228 times. I have presented my research to the community through 34 conference and invited lecture presentations. In addition, I have one pending patent.

GRANT SUPPORT SUMMARY

In the past five years, as a PI or Co-PI, I have contributed in 36 proposals (i.e., one proposal submitted every seven weeks) to academic, industrial, state, and federal agencies with a success rate of more than %38 (13 out of 34; two proposals are pending). Currently, I am serving as the PI for the highly prestigious, competitive, and complex NSF Partnership for International Research and Education (2007-12 for $2300K with less than 4% acceptance rate; I was a Co-PI for the first two years of this award), a Co-PI of NSF CREST Subproject (2008-13 for $825K), and a Co-PI of NSF CI-TEAM (2006-10 for $765K). As a sole PI, I have received several prestigious awards from industry: IBM Research Award (2006-07 for $40K), IBM Research Award (2007-08 for $40K), Kaseya Research & Education Award (2008-09 for $122K in kind), and Kaseya Research & Education Award (2009-10 for $147K in kind and $20K in cash). As a Co-PI, I have also received a NSF CREST Supplement (2006-07 for $100K), a NSF REU (2006-09 for $300K; indicated as Sr. Inv. for limited number of PI & Co-PI), and an IBM Shared University Research Award (2005-06 for $50K). Finally, I received some small, but prestigious grants from TeraGrid Pathway Fellowship (2009 for $12K and 200,000 unit hours or TeraGrid resources) and FIU RUGS (2008-09 for $3K) as sole PI. In total, as a PI or Co-PI, I have attracted a total of $4.7 million ($1.7M as PI and $3M as Co-PI) to support research and education at my school.

PROFESSIONAL ACTIVITIES SUMMARY

I have served as an Editorial Board Member for one journal (the International Journal of Computing & Information Technology, IJCIT), a conference Program Co-Chair for two conferences (the IEEE International Conference on Networking, Sensing and Control and the International Conference on Software Engineering and Knowledge Engineering),

Registration Chair for IEEE ICNSC-2006, Steering Committee Member for LA Grid (2006-2009), Demo/Exhibit Chair for HPDC-2008, Publicity Co-Chair for 8 conferences (e.g., ICAC, CCGrid, SEKE, ICCC), and served as a member of Florida LambdaRail Research Advisory Council (2007 & 2008) and Kaseya Influencer Committee (2008 & 2009). In addition, I have served on the Program Committees for more than 30 international conferences including major conferences in Autonomic Computing, High-Performance Computing, Grid and Cloud Computing, Software Engineering, and Distributed System. I have also been a reviewer for more than 20 top quality journals and books (e.g., TSE, TPDS, SP&E, JPDC, JSS, etc.). Additionally, I have served as a panelist and proposal reviewer or National Science Foundation (NSF), The Luxembourg National Research Fund (FNR), and Florida Sea Grant.

SERVICE TO THE UNIVERSITY COMMUNITY SUMMARY

In the past five years, I have served as a member of Recruitment Committee for four years at our school and during my service we successfully hired four new faculty members. I served as a member of Graduate Committee for three years and among other tasks, I evaluated many graduate student applications. I was also a member of the first MS in IT committee and developed two course proposals; both accepted. I served as the first Colloquium Coordinator of our school in 2004-05 and again served in 2008-09. At the university level, I have served as a FIU Honors Society Faculty Advisor and advised a number of undergraduate honor students.

TEACHING SUMMARY

I believe that teaching is the most rewarding part of my job as it gives me an opportunity to share the most recent results of my research with my students and challenge their young and talented minds with the most recently developed knowledge in the field. I have a passion to keep the curriculum of our school up-to-speed with the new areas of Computer Science and Information Technology. During the past five years, I have successfully developed five new courses (two undergraduate and three graduate courses); all have been approved and added to the FIU Course Catalog. I have taught 11 different courses for the first time. I have received high teaching evaluations by my students throughout my academic career (4.42 out of 5 on average) and have been enjoying the numerous thank-you letters from my past students. Moreover, I have supervised more than 40 graduate and undergraduate students during semester-long individual independent studies. In addition, to support our undergraduate IT students, I have served on the MS in IT committee for one year and participated in the development of the MS in IT proposal and two of its core courses.

ADVISING SUMMARY

In December 2007 I received the Excellence in Mentoring Award by the School of Computing and Information Sciences at FIU. I have graduated one Ph.D. student (Onyeka Ezenwoye; defended in Summer 2007; currently an Assistant Professor at the Electrical Engineering and Computer Science Department of South Dakota State University) and one Master Student with Thesis (Fernando Trigoso; defended in Fall 2007; currently a Software Architect at Ultimate Software). Currently, I am advising

seven PhD students (one has defended his proposal, five have passed their candidacy exam, and one is ready to take his candidacy exam). I am expecting that two of my current PhD students be graduated by Summer 2010. I have also served in the PhD Dissertation Committee of 10 PhD students and MS Thesis Committee of three MS students. In addition, in the past five years, I have advised more than 35 undergraduate students through NSF REU, NSF REU Supplement, NSF PIRE, and other industry supported research and educational programs.

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