Curriculum Vitae

S. Masoud Sadjadi

School of Computer Science
Florida International University
ECS 212 E, University Park
11200 SW 8th St.
Miami, FL 33199

Telephone: (305)348-1835, Fax: (305)348-3549
Email: sadjadi@cs.fiu.edu
URL: http://www.cs.fiu.edu/~sadjadi

Education

Ph.D. in Computer Science, Michigan State University, East Lansing, Michigan, 2004.

Dissertation: Transparent Shaping of Existing Software to Support Pervasive and Autonomic Computing.
Doctoral Advisor: Professor Philip K. McKinley

M.S. in Computer Software Engineering, Azad University, Tehran, Iran, 1999.

Project: Internet Security.
Advisor: Professor Nasrollah Moghaddam.

B.S. in Computer Hardware Engineering, University of Tehran, Tehran, Iran, 1995.

Research Interests

Major research areas include software engineering, distributed systems, and financial markets with focus on autonomic computing, pervasive computing, component-based software engineering, aspect-oriented design and programming, adaptive software and adaptive middleware, mobile computing, and multimedia group communication.

Professional Experience

2010-present, **Associate Professor of Computer Science**, School of Computer Science, Florida International University.
Duties: Teaching undergraduate and graduate courses including Introduction to Software Engineering, Advanced Software Engineering, and coordinating all the efforts required for Senior Project and Capstone courses for all our undergraduates in Computer Science. Conducting research with undergraduate, Masters and PhD students in the areas of Software Engineering, Distributed Systems, and Financial Markets.

2014-2017, **Director of Professional MS in IT**, School of Computer Science, Florida International University.
Duties: Directing, planning, curriculum updates, advertising, recruiting instructors, recruiting students, etc.

2009-2013, **Director of NSF CI-PIRE**, School of Computer Science, Florida International University.
Duties: Conducting collaborative research and education together with four other universities and industrial partners in US and many academic and industrial units around the world spreading over twenty countries. Sending 100+ students to international research labs and universities for periods of four to 12 weeks.

2004-2009, **Assistant Professor of Computer Science**, School of Computer Science, Florida International University.
Duties: Teaching undergraduate and graduate courses including Introduction to Software Engineering, Advanced Software Engineering, and Component-Based Software Engineering; and conducting research with undergraduate, Masters and PhD students in the areas of autonomic computing, pervasive computing, software engineering, distributed systems, multimedia collaborative applications.

2001-2004, Graduate Research Assistant, Department of Computer Science and Engineering, East Lansing, Michigan.
Duties: Conducting original research on the RAPIDware project, funded by Office of Naval Research (ONR). Contributions: MetaSockets, a runtime adaptable communication component in Java; ACT (Adaptive CORBA Template), which supports interoperation among otherwise incompatible adaptive middleware frameworks; and TRAP/J (Transparent Reflective Aspect Programming in Java), which can be used to weave new adaptive behavior into legacy Java programs, without modifying original source code.

2000-2001, **Systems Administrator**, Department of Computer Science and Engineering, East Lansing, Michigan.
Duties: developed and maintained Windows 2000 instructional laboratories including about 60 workstations; upgraded and maintained the CSE department's network infrastructure; installed and maintained Windows 2000 servers with more than 500 users; installed and maintained MS-SQL servers for student projects.

2000-2000, **Graduate Teaching Assistant**, Department of Computer Science and Engineering, East Lansing, Michigan.
Course: Introduction to Programming, CSE 231 (Spring and Summer semesters of 2000).
Duties: weekly duties include preparing for laboratory sessions, teaching in laboratory, attending and participating in weekly staff meetings, grading laboratory exercises, assisting students in help rooms.

1996-1999, **System Analyst and Senior Programmer**, Iran University Press, Tehran, Iran.
Duties: Supervised more than 60 employees, including project managers, programmers, and typists; maintained all the computing facilities including software and hardware; developed and maintained systematic process for publishing books, magazines, and specialized dictionaries; developed and maintained the Payment application, a software to manage personnel records and their payments; developed the Vajegan and Vajenameh applications, software for building specialized dictionaries; developed Sales application, a software for selling books and magazines; developed the Object Professional package in Farsi, a package for developing bilingual (English/Farsi) user interface in Pascal.

1992-1995, Programmer, Tebb Va Rayaneh Corporation, Tehran, Iran.
Duties: worked with 20 other programmers in a group; developed the Hospital software packages, including the Medical Laboratory package and the Pharmacy package, which are software packages written in C++ for computerizing patient records (at the time the laboratory package was being used by more than 20 laboratories and the Pharmacy package was being used by more than 10 pharmacies); developed the Farsi Turbo Vision package, a package for developing bilingual (English/Farsi) user interface in C++ (later used by many other companies in Iran to develop bilingual software).

Research Funding Activities

- NSF PIRE: A Global Living Laboratory for Cyberinfrastructure Application Enablement (PI; $2.3M; 9/15/07–8/31/11; Co-PI for the first 2 years)

  Project Summary: The goal of this PIRE project (http://pire.fiu.edu/) is to conduct research and provide international research and training experiences to its participants in the area of *Transparent Cyberinfrastructure Enablement* by leveraging the Latin American Grid's (LA Grid) established international collaborative programs, resources, and community. CyberInfrastructure (CI) aims to radically simplify the manner by which scientific and business domain experts develop, use, and maintain software applications over distributed computing resources. Our research aims to develop methodologies, platforms, and tools for better enabling CI applications in a way that eases the application development process and make resulting applications more adaptive to future changes of CI. Our approach is characterized as application-driven by basing and focusing our investigation on (1) supporting CI-enablement for a few carefully chosen critical application domains, *e.g.* weather modeling, life sciences, and healthcare, and (2) developing common methodologies, services and tools for developing CI-enabled applications in these domains. We hypothesize an enabling application development paradigm called Transparent Cyberinfrastructure Enablement (TCE), whose goal is to allow domain experts to effectively express the logic and software artifacts of domain applications while hiding the details of the CI architecture, software, and hardware stack.

  Results: This project is just finishing its second year. During the first year, 18 students traveled to 5 countries (Argentina, China, India, Mexico, and Spain), conducted research

in 16 TCE-related projects, and published 19 papers (two journals, one book chapter, and 16 conference/workshop papers). They also, presented 18 posters during the FIU-FAU PIRE 2008 workshop. During the second year, 19 students traveled (or still travelling) to 5 countries (Brazil, China, France, India, and Spain).

- NSF CI-TEAM: Global CyberBridges (Co-PI; $765K; 10/2/06-6/31/10)

  Project Summary: The goal of the GCB project (http://cyberbridges.net/) is to produce a new generation of minority scientists and engineers capable of fully integrating cyberinfrastructure (CI) into the research, education, professional, and creative processes of scientific disciplines. It establishes a base of sustainability through geographically expanding participation. It is designed to create a network of scientists and researchers that spans six research institutions spread over four regions and three countries: USA, China, Hong Kong, and Brazil.

  Results: Results from first-year External Assessment Committee Report: Concluded that GCB program participation had been advantageous for the research of each team, and the program structure and classes worked well. The external assessment report says, "clear prospect for more rapid and computationally advanced research production." The assumptions about research problems and needs that justified the GCB project were validated by the experience of the teams. GCB has supported over sixty students as either fellows or team members. GCB has produced twenty-six peer-reviewed publications co-authored by GCB students at USA, Brazil, and China. Finally, the "Grid Enablement of Scientific Applications" course was developed and institutionalized by Dr. Sadjadi during the course of this GCB project.

- Latin American Grid (PI for three IBM-sponsored research projects; $80K in total; 9/1/06-present)

  Project Summary: *LA Grid*, pronounced "lah grid," is an international multi-disciplinary research community and virtual computing grid enabling institutions and industry to extend beyond their individual reach to facilitate collaborative IT research, education and workforce development. *LA Grid* is the first-ever comprehensive computing grid to link faculty, students, and researchers from institutions across the United States, Latin America and Spain to collaborate on complex industry applications for business and societal needs in the context of healthcare, life sciences and disaster mitigation.

  Under this umbrella project, I got three grants from IBM for the following projects:

  - Transparent Grid Enablement of the Weather Research and Forecast code (PI; $20K; 9/1/06-8/31/07)
    Project Summary: To mitigate the impacts of hurricanes, we need to provide users (e.g., residents, homeowners, business owners, and local, state, and federal governments) with sufficiently accurate information to allow them to plan accordingly. The WRF model Version 2.1.2 software distribution comprises about 360000 lines of source code.

- Design and development of the LA Grid MetaScheduler at FIU (PI; $20K; 9/1/06-8/31/07)
  Project Summary: There is a need for matching and managing jobs on available resources in heterogeneous Grid computing environments.
  Our Solution: We are investigating a hierarchical and peer2peer approach to meta-scheduling and meta-brokering. Also, we have developed an adaptive framework for the execution of BPEL workflow processes for job flow management.

- Grid Enablement of Hurricane Mitigation Applications (PI; $40K; 6/1/06-5/31/07)

Results: We have been able to successfully develop a prototype for the following components of our overall solution to Grid Computing:
- A Prototype for a Web-Based Portal for WRF Ensemble Forecast.
- A Prototype for a Job-Flow Management in Grid Computing Environments.
- A Prototype for a Meta-Scheduling in Grid Computing Environment.
- A Prototype for a Modeling the Execution Time of WRF.
- A Prototype for a Transparent Grid Enabler for Java Program.

- IT Automation (Sole PI.; $290K in total supported by Kaseya International Shared Services, Sarl; 10/01/08-06/01/10)

Project Summary: The increasing reliance of industrial, academic, and governmental organizations to their information technology (IT) supported services and the need for the high availability of these services in today's globalized market have led to an increasing demand for IT professionals who are capable of administrating and managing these services efficiently. The conventional and reactive approaches to IT management such as *break-fix* and *block-time*, which respond to IT-related problems only after they already interrupted services, are being replaced by preventive and proactive *IT automation* approaches, which monitor and prevent/correct potential problems before they occur. Currently our curriculum does not include such a course to instill IT automation knowledge to our undergraduate IT students. I propose to develop a course that trains our IT students how to proactively monitor, manage and maintain distributed IT infrastructure remotely, easily, and efficiently by using available integrated Web-based IT automation utilities. Example IT automation tools will be used to give students hands-on experience on auditing, assets and change management, network monitoring, OS imaging, patch management, help desk, remote control, user state management, end-point security, backup, and disaster recovery. In general, this IT Automation course prepares our IT students with a deep understanding of system administration tasks, comprehensive knowledge of different aspects of IT management and automation, and state-of-the-art solutions to remote and automated IT management.

Results: A new IT Automation course was proposed by Dr. Sadjadi and was approved by FIU and is currently in the process of getting a permanent course number to be added to the FIU Course Catalog. This class was offered for the first time in Spring 2009 and was overwhelmingly well received by our IT students. I consider this class a success for the following reasons: out of the 30 students, seven of them could get a prestiguous and paid internship with Kaseya, five of them got approved to the PIRE program and spent 8

weeks of their PIRE internship in Brazil (all expenses paid), two student were hired by Kaseya, several are currently being interviewed, and two more have been taking an independent study with me during summer working on some interesting IT Automation research projects.

- NSF REU: Autonomic Computing Research at FIU (Sr. Inv.; $300K; 03/15/06-03/14/09)

  Project Summary: The overriding objective of the REU site (http://www.cis.fiu.edu/reu/) at Florida International University is to strengthen the pipeline of underrepresented students to graduate work in Computer Science. The Site provides REU students with a venue to directly participate in state-of-the-art research by exposing them to research opportunities, graduate school life, and work in large research collaboration settings. REU students participate in team-oriented projects involving several areas of autonomic computing, including self-management in mobile & grid computing, testing of autonomic systems, autonomic communication systems, autonomic storage systems, data mining, and network monitoring and management. The Site's faculty continues their mentoring relationships with students after the completion of the summer program to ensure that each project is completed and that each participant has the support needed to make the transition to graduate school.

  Results: Each year, this REU site provided 10 undergraduate students (4 from FIU; 6 from other universities) with a venue to directly participate in state-of-the-art research while exposing them to graduate school life and work in academia and industrial research labs for 12 summer weeks. The students participated in team-oriented projects involving various areas of autonomic computing and establish meaningful mentoring relationships with faculty, which continue well beyond the 12 weeks of summer research program. Over 50% of 2006 and 2007 participants have co authored at least one article in a variety of journals, conferences and workshops (10 publications) and 40% of students have either presented at a conference. Additional publications are under preparation as a part of follow through activities. Our REU site has achieved its goals in that 100% of our students have experienced the daily life in graduate school.

- **IBM, SUR Program**
  Title: Combining Knowledge Discovery and Adaptive Software Techniques to Build Autonomic Systems. PIs: Tao Li and **S. Masoud Sadjadi**.

- **NSF ITR Proposal.**
  Contributed directly to preparation of a proposal, recently awarded by National Science Foundation (NSF) under its Information Technology Research (ITR) program. Title: Supporting Adaptable Pervasive Computing through a Kernel Middleware eXchange (KMX). Principal Investigator: Dr. Philip K. McKinley. Description: The KMX project investigates the interaction between adaptive middleware and operating system kernel. Specifically, the project focuses on the following question: What services and interfaces should operating system provide

to enable adaptive middleware to better meet the needs of mobile computing applications?

- **ONR RAPIDware Project Renewal.**
  Participated in the third-year review of the RAPIDware project, funded by the Office of Naval Research. ONR has since announced an award to continue the RAPIDware project for two additional years, until 2006. Title: Component-Based Development of Adaptable and Dependable Middleware (RAPIDware). Principal Investigator: Dr. Philip K. McKinley, Dr. R. E. Kurt Stirewalt, Dr. Laura K. Dillon, Dr. Betty H. C. Cheng, and Dr. Sandeep Kulkarni. Description: RAPIDware addresses the design of high-assurance, adaptable software to protect critical infrastructures from extreme operating conditions, component failures and cyber-attack.

Honors and Awards

IWQoS 2004 Best Student Paper Award, The Twelfth IEEE International Workshop on Quality of Service (IWQoS 2004), Montreal, Canada, 2004.

Outstanding Graduate Student, Department of Computer Science and Engineering, Michigan State University, 2004.

High Score in Qualifying Examination, awarded $2000 graduate fellowship, Department of Computer Science and Engineering, Michigan State University, 2001.

Publications

Ph.D. Dissertation

- **S. Masoud Sadjadi**. Transparent Shaping for Existing Software to Support Pervasive and Autonomic Computing. PhD thesis, Department of Computer Science, Michigan State University, East Lansing, United States, August 2004.

Books

- Jerry Gao, Marek Reformat, **S. Masoud Sadjadi**, and Du Zhang. *Software Engineering and Knowledge Engineering*. 2010. The 22nd International Conference on Software Engineering and Knowledge Engineering, SEKE 2010, San Francisco Bay, USA, July 1 - July 3, 2010 Proceedings.
- Bing Xie, Juergen Branke, **S. Masoud Sadjadi**, Daqing Zhang, and Xingshe Zhou. *Autonomic and Trusted Computing*. 2010. The 7th International Conference, ATC 2010 Xi□an, China, October 26-29, 2010 Proceedings.
- **S. Masoud Sadjadi**. *Transparent Shaping for Existing Software to Support Pervasive and Autonomic Computing*. PhD thesis, Department of

Computer Science, Michigan State University, East Lansing, United States, August 2004.

Book Chapters

- **S. Masoud Sadjadi**, Philip K. McKinley, and Betty H.C. Cheng. *ADAPTIVE CONTROL APPROACH FOR SOFTWARE QUALITY IMPROVEMENT*, chapter Transparent Shaping: A Methodology for Adding Adaptive Behavior to Existing Software Systems and Applications. World Scientific & Imperial College Press, 2011.
- David Villegas, Ivan Rodero, Liana Fong, Norman Bobroff, Yanbin Liu, Manish Parashar, and **S. Masoud Sadjadi**. *Handbook of Cloud Computing*, chapter The Role Of Grid Computing Technologies in Cloud Computing, pages 183-218. Springer, 2010. (in press; 35 pages; single-spaced).
- Onyeka Ezenwoye and **S. Masoud Sadjadi**. *Developing Effective Service Oriented Architectures: Concepts and Applications in Service Level Agreements, Quality of Service and Reliability*, chapter Applying Concept Reuse for Adaptive Service Composition. IGI Global, 2010. (in press; 25 pages; single-spaced).
- Kasturi Chatterjee, **S. Masoud Sadjadi**, and Shu-Ching Chen. *Multimedia Services in Intelligent Environments - Integrated Systems*, chapter A Distributed Multimedia Data Management over the Grid. Springer, 2009. (in press; 23 pages; single-spaced).
- Rosa Badia, Gargi Dasgupta, Onyeka Ezenwoye, Liana Fong, Howard Ho, Sawsan Khuri, Yanbin Liu, Steve Luis, Anthony Praino, Jean-Pierre Prost, Ahmed Radwan, **Seyed Masoud Sadjadi**, Shivkumar Shivaji, Balaji Viswanathan, Patrick Welsh, and Akmal Younis. *High Performance Computing and Grids in Action: Advances in Parallel Computing*, volume 16, chapter Innovative Grid Technologies Applied to Bioinformatics and Hurricane Mitigation, pages 436-462. IOS Press, Amsterdam, 2007.
- **S. Masoud Sadjadi** and Philip K. McKinley. *Autonomic Computing: Concepts, Infrastructure, and Applications*, chapter Transparent Autonomization in Composite Systems, pages 169-190. Taylor and Francis Books, 6000 Broken Sound Parkway, NW, Boca Raton, FL 33487, 2006.

Archival Journal and Magazine Articles

- Ivan Rodero, David Villegas, Norman Bobroff, Yanbin Liu, Liana Fong, and **Seyed Masoud Sadjadi**. Enabling Interoperability among Grid Meta-Schedulers Springer Journal of Grid Computing, 2013.
- D. Villegas, I. Rodero, A. Devarakonda, Y. Liu, N. Bobroff, L. Fong, **S.M. Sadjadi**, and M. Parashar. Leveraging Cloud Federation in a Layered Service Stack Model. Journal of Computer and System Sciences, Special Issue: Cloud Computing 2012.

- I. Rodero, D. Villegas, Y. Liu N. Bobroff, L. Fong, and **S. Masoud Sadjadi**. Enabling grid interoperability among meta-schedulers. *Future Generation Computer Systems Journal*, 2011. Note: Under review.
- D. Villegas, N. Bobroff, I. Rodero, J. Delgado, Y. Liu, A. Devarakonda, L. Fong, **S. Masoud Sadjadi**, and M. Parashar. Cloud federation in a layered service model. *Journal of Computer and System Sciences*, 2011. Note: Under review.
- Javier Delgado, Gabriel Gazolla, Esteban Clua, and **S. Masoud Sadjadi**. A case study on porting scientific applications to gpu/cuda. *Journal of Computational Interdisciplinary Sciences*, 2:3-11, 2011. PDN: jcis.2011.02.01.0027.
- Onyeka Ezenwoye, M. Brian Blake, Gargi Dasgupta, Liana Fong, Selim Kalayci, and **S. Masoud Sadjadi**. Managing faults for distributed workflows over Grids. *THE IEEE INTERNET COMPUTING*, pages 84-88, 2010.
- Chi Zhang, **S. Masoud Sadjadi**, Weixiang Sun, Raju Rangaswami, and Yi Deng. A user-centric network communication broker for multimedia collaborative computing. *The The International Journal of Multimedia Tools and Applications*, 2009. (in press; 19 pages; single-spaced).
- Ivan Rodero, Francesc Guimb, Julita Corbalan, Liana Fong, and **S. Masoud Sadjadi**. Grid broker selection strategies using aggregated resource information. *The Elsevier Future Generation Computer Systems, The International Journal of Grid Computing and eScience*, 2009. (in press; 34 pages; single-spaced).
- **S. Masoud Sadjadi** and Philip K. McKinley. Transparent autonomization in CORBA. *The Elsevier Computer Networks Journal, special issue on autonomic and self-organising systems*, 53:1570-1586, 2009. doi:10.1016/j.comnet.2008.12.012.
- **S. Masoud Sadjadi** and Fernando Trigoso. TRAP.NET: A realization of transparent shaping in .NET. *International Journal of Software Engineering and Knowledge Engineering*, 19(4):507-528, 2009.
- Onyeka Ezenwoye and **S. Masoud Sadjadi**. A proxy-based approach to enhancing the autonomic behavior in composite services. *the Journal of Networks (ISSN 1796-2056)*, 3(5):42-53, May 2008.
- Yi Deng, **S. Masoud Sadjadi**, Peter J. Clarke, Vagelis Hristidis, Raju Rangaswami, and Yingbo Wang. CVM - a communication virtual machine. *The Elsevier Special Issue of the Journal of Systems and Software (JSS)*, 81:1640-1662, 2008.
- Farshad A. Samimi, Philip K. McKinley, **S. M. Sadjadi**, Chiping Tang, Jonathan K. Shapiro, and Zhinan Zhou. Service Clouds: Distributed infrastructure for adaptive communication services. *IEEE Transactions on Network and System Management (TNSM), Special Issue on Self-Managed Networks, Systems and Services*, 4(2), September 2007.
- **S. M. Sadjadi**, Philip K. McKinley, Eric P. Kasten, and Zhinan Zhou. Metasockets: Design and operation of run-time reconfigurable communication services. *Software: Practice and Experience (SP&E).*

Special Issue: Experiences with Auto-adaptive and Reconfigurable Systems., 36:1157-1178, 2006.

- Philip K. McKinley, **S. Masoud Sadjadi**, Eric P. Kasten, and Betty H. C. Cheng. Composing adaptive software. *IEEE Computer*, pp. 56-64, July 2004. For more information, please refer to the technical report.
- P. K. McKinley, U. I. Padmanabhan, N. Ancha and **S. M. Sadjadi**, "Composable Proxy Services to Support Collaboration on the Mobile Internet," *IEEE Transactions on Computers (Special Issue on Wireless Internet)*, pp. 713-726, June 2003.

Refereed Conference and Workshop Proceedings

- Lukkamol Prapkree, **Masoud Sadjadi**, Fatma Huffman, Cristina Palacios. Development and Pilot Testing of the Snackability Smartphone Application to Identify Healthy and Unhealthy Snacks. Health Inform Res. 2019 Jul;25(3):161-172.doi: 10.4258/hir.2019.25.3.161.Epub 2019 Jul 31.
- **Masoud Sadjadi** et. al. Vertically Integrated Projects (VIP) Programs: Multidisciplinary Projects with Homes in Any Discipline. Proceedings of the 2017 ASEE Annual Conference & Exposition.
- Maral Kargarmoakhar, Mohsen Taheri and **S. Masoud Sadjadi**. Implementing and Evaluating Scrum in Computer Science Senior Projects. Proceedings of the Twenty-Ninth International Conference on Software Engineering and Knowledge Engineering (SEKE 2017).
  Mohsen Taheri and **S. Masoud Sadjadi**. A Feature-Based Tool-Selection Classification for Agile Software Development. The 2015 International Conference on Software Engineering and Knowledge Engineering. Wyndham Pittsburgh University Center, Pittsburgh, USA July 2015.
- Mohsen Taheri and **S. Masoud Sadjadi**. A Comparative Study on Cloud-based Agile Tools, The 24th International Conference on Software Engineering and Data Engineering (SEDE 2015).
  San Diego, California, USA October 2015.
- Onyeka Ezenwoye, **S. Masoud Sadjadi**, and Wei Wang. Modeling and Simulating Reconfigurable Networked Service Composites The 12th IEEE International Conference on Services Computing (SCC 2015) New York, USA, July 2015.
- M. Shafaatdoost and **S. M. Sadjadi**. Virtual Topology Manager for Cloud Infrastructure, The Second International IBM Cloud Academy Conference (ICA CON 2014) Atlanta, GA. May 2014.
- Selim Kalayci and **Masoud Sadjadi**. Pattern-based Decentralization and Run-time Adaptation Framework for Multi-site Workflow Orchestrations. The 2013 International Conference on Software Engineering and Knowledge Engineering, Boston, USA July 2013.
- M. S. Doost, **S. M. Sadjadi**, J. R. da Silva Jr., M. Zamith, M. Joselli, and E. Clua. Architecture of Request Distributor for GPU Clusters. The 3rd Workshop on Applications for MultiCore Architectures (WAMCA) Columbia University, New York, USA, 2012.

- X. J. Collazo-Mojica, **S. M. Sadjadi**, J. Ejarque and R. M. Badia. Cloud Application Resource Mapping and Scaling Based on Monitoring of QoS Constraints. The 2012 International Conference on Software Engineering and Knowledge Engineering, San Francisco, California, USA 2012.
- Francisco-Edgar Castillo-Barrera, Carolina Medina- Ramirez, Jose Labra Gayo and **Masoud Sadjadi**. A SemanticWeb Framework for Teaching Logic Circuits. The Proceedings of the 2012 International Conference on Frontiers in Education: Computer Science and Computer Engineering (FECS 12), Las Vegas, Nevada, USA 2012.
- Francisco-Edgar Castillo-Barrera, Hector Duran- Limon, R. Carolina Medina-Ramirez, Jose Labra Gayo and **Masoud Sadjadi**. Verifying the Behavioral Contracts among Components by means of Semantic Web Techniques. The Proceedings of the 2012 International Conference on Software Engineering Research and Practice (SERP 12), Las Vegas, Nevada, USA 2012.
- David Villegas, Athanasios Antoniou, **Seyed Masoud Sadjadi**, Alexandru Iosup. An Analysis of Provisioning and Allocation Policies for Infrastructure-as-a-Service Clouds. The 12th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid 2012), Canada 2012.
- J. Delgado, L. Fong, Y. Liu, N. Bobroff, S. Seelam, and **S. Masoud Sadjadi**. Efficiency assessment of parallel workloads on virtualized resources. In *Proceedings of the 4th IEEE/ACM International Conference on Utility and Cloud Computing (UCC 2011)*, Melbourne, Australia, December 2011.
- Ingrid Buckley, Eduardo B. Fernandez, Marco Anisetti, Claudio A. Ardagna, **S. Masoud Sadjadi**, and Ernesto Damiani. Towards pattern-based reliability certication of services. In *Proceedings of the International Symposium on Distributed Objects and Applications, first International Symposium on Secure Virtual Infrastructures (DOA-SVI'11)*, Crete, Greece, October 2011.
- David Villegas and **S. Masoud Sadjadi**. Deva: Distributed ensembles of virtual appliances in the cloud. In *Proceedings of the 17th Euro-Par Conference (Euro-Par 2011)*, pages 467-478, Bordeaux, France, August 2011. Part I.
- David Villegas and **S. Masoud Sadjadi**. Mapping non-functional requirements to cloud applications. In *Proceedings of the 2011 International Conference on Software Engineering and Knowledge Engineering (SEKE 2011)*, Miami, Florida, July 2011. (acceptance rate 31%).
- Xabriel J. Collazo-Mojica and **S. Masoud Sadjadi**. A metamodel for distributed ensembles of virtual appliances. In *Proceedings of the 2011 International Conference on Software Engineering and Knowledge Engineering (SEKE 2011)*, Miami, Florida, July 2011. (acceptance rate 31%).

- Xabriel J Collazo-Mojica, **S. Masoud Sadjadi**, Fabio Kon, and Dilma Da Silva. Virtual environments: Easy modeling of interdependent virtual appliances in the cloud. In *Proceedings of the SPLASH 2010 Workshop on Flexible Modeling Tools (SPLASH 2010)*, Reno, Nevada, October 2010.
- Selim Kalayci, Gargi Dasgupta, Liana Fong, Onyeka Ezenwoye, and **S. Masoud Sadjadi**. Distributed and adaptive execution of Condor DAGMan workflows. In *Proceedings of the 22nd International Conference on Software Engineering and Knowledge Engineering (SEKE 2010)*, San Francisco Bay, CA, July 2010.
- Javier Delgado, Jo□o Gazolla, Esteban Clua, and **S. Masoud Sadjadi**. An incremental approach to porting complex scientific applications to GPU/CUDA. In *Proceedings of the IV Brazilian e-Science Workshop*, Minas Gerais, Brazil, July 2010.
- Javier Delgado, **S. Masoud Sadjadi**, Hector Duran, Marlon Bright, and Malek Adjouadi. Performance prediction of weather forecasting software on multicore systems. In *Proceedings of the 24th IEEE International Parallel & Distributed Processing Symposium (IPDPS-2010), 11th Parallel and Distributed Scientific and Engineering Computing (PDSEC) workshop*, Atlanta, Georgia, April 2010.
- Onyeka Ezenwoye, Salome Busi, and **S. Masoud Sadjadi**. Dynamically reconfigurable data-intensive service composition. In *Proceedings of the 6th International Conference on Web Information Systems and Technologies (WEBIST 2010)*, Valencia, Spain, April 2010.
- Onyeka Ezenwoye, Balaji Viswanathan, **S. Masoud Sadjadi**, Liana Fong, Gargi Dasgupta, and Selim Kalayci. Task decomposition for adaptive data staging in workflows for distributed environments. In *Proceedings of the 21st International Conference on Software Engineering and Knowledge Engineering (SEKE 2009)*, pages 16-19, Boston, MA, July 2009.
- Ingrid Buckley, Eduardo B. Fernandez, Gustavo Rossi, and **S. Masoud Sadjadi**. Web services reliability patterns. In *Proceedings of the 21st International Conference on Software Engineering and Knowledge Engineering (SEKE 2009)*, pages 4-9, Boston, MA, July 2009.
- **S. Masoud Sadjadi**, Sandie Kappes, and Laura F. McGinnis. Grid enablement of scientific applications on teragrid. In *Proceedings of the TeraGrid 2009 Conference*, Arlington, Virginia, June 2009.
- Yanbin Liu, David Villegas, Norman Bobroff, Liana Fong, Ivan Rodero, Seetharami Seelam, and **S. Masoud Sadjadi**. An experimental system for grid meta-broker evaluation. In *Proceedings of the ACM Large-scale System and Application Performance workshop (LSAP2009) of the International Symposium on High Performance Distributed Computing (HPDC 2009)*, pages 11-18, Munich, Germany, June 2009.
- Juan C. Martinez, Lixi Wang, Ming Zhao, and **S. Masoud Sadjadi**. Experimental study of large-scale computing on virtualized resources. In *Proceedings of the 3rd International Workshop on Virtualization Technologies in Distributed Computing (VTDC 2009) of the IEEE/ACM*

6th International Conference on Autonomic Computing and Communications (ICAC-2009), pages 35-41, Barcelona, Spain, June 2009.

- Javier Delgado, Mark Joselli, Silvio Stanzani, **S. Masoud Sadjadi**, Esteban Clua, and Heidi Alvarez. A learning and collaboration platform based on SAGE. In *Proceedings of the ACM 14th Western Canadian Conference on Computing Education (WCCCE 2009)*, pages 70-76, Simon Fraser University, Vancouver, Canada, May 2009.
- **S. Masoud Sadjadi**, Shu-Ching Chen, Borko Furht, Pete Martinez, Scott Graham, Steve Luis, Juan Caraballo, and Yi Deng. PIRE: A global living laboratory for cyberinfrastructure application enablement. In *Proceedings of the ACM Tapia Celebration of Diversity in Computing 2009 (Tapia'09)*, pages 64-69, Portland, Oregon, April 2009.
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- Selim Kalayci, Onyeka Ezenwoye, Balaji Viswanathan, Gargi Dasgupta, **S. Masoud Sadjadi**, and Liana Fong. Design and implementation of a fault tolerant job flow manager using job flow patterns and recovery policies. In *Proceedings of the 6th International Conference on Service Oriented Computing (ICSOC'08)*, volume 5364/2008, pages 54-69, Sydney, Australia, December 2008. Springer Berlin / Heidelberg. (acceptance rate 20.4%).
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Poster Summaries

- **S. M. Sadjadi**, P. K. McKinley, R. E. K. Stirewalt, and B. H.C. Cheng, "Generation of Self-Optimizing Wireless Network Applications," In *Proceedings of the International Conference on Autonomic Computing (ICAC-04)*, pp. 310-311, New York, NY, May 2004.
- **S. M. Sadjadi**, P. K. McKinley, and E. P. Kasten, "MetaSockets: Run-Time Support for Adaptive Communication Services," (Poster Summary), In *Addendum to the Proceedings of the 2002 International Symposium on Distributed Objects and Applications*, Irvine, California, pp. 42-45, October 2002.

Posters

- Michael Robinson, Camilo A. Silva, **S. Masoud Sadjadi**, Guangyuan Liu, and Dr. Giri Narasimhan. Finding repeats and signatures in dna sequences using mpi clusters. In *the 5th International Symposium on Bioinformatics Research and Applications (ISBRA09)*, Nova Southeastern University, Ft. Lauderdale, Florida, USA, May 2009.
- Michael Robinson, Guangyuan Liu, Camilo A. Silva, **S. Masoud Sadjadi**, and Dr. Giri Narasimhan. Finding repeats and signatures in dna sequences using mpi clusters. In *the 16th Annual FGLSAMP EXPO*, University of Miami, Florida, Feb. 2009. (winner of the third place in the poster competition.).
- Michael Robinson, Guangyuan Liu, Camilo A. Silva, **S. Masoud Sadjadi**, and Dr. Giri Narasimhan. Finding repeats and signatures in dna sequences using mpi clusters. In *the 23rd National Conference on Undergraduate Research*, University of Wisconsin – La Crosse, Wisconsin, April 2009.
- Marlon Bright, Javier Delgado, Javier Figueroa, and **S. Masoud Sadjadi**. Application performance profiling and prediction in grid environment. In *the 19th Annual Argonne Symposium for Undergraduates in Science, Engineering and Mathematics*, Argonne, IL, November 2008.
- Camilo A. Silva, Michael Robinson, Guangyuan Liu, **S. Masoud Sadjadi**, Dr. Giri Narasimhan, and Hector Alejandro Durán Limón. Finding repeats and signatures in dna sequences using mpi clusters. In *the poster presentation session of the 6th Latin American Grid (LA Grid) Summit*, Florida Atlantic University, Boca Raton, FL, U.S.A., October 2008.
- Allison Lanager, Sean Leslie, Seychelles Martinez, Elias Rodriguez, **S. Masoud Sadjadi**, and Hector Alejandro Durán Limón. A web-based portal for hurricane mitigation. In *the poster presentation session of the 6th Latin American Grid (LA Grid) Summit*, Florida Atlantic University, Boca Raton, FL, U.S.A., October 2008.
- Marlon Bright, Javier Delgado, **S. Masoud Sadjadi**, and Rosa Badia. International experience: From 0 to 6 foreign countries in 9.5 weeks. In *the poster presentation session of the 6th Latin American Grid (LA Grid) Summit*, Florida Atlantic University, Boca Raton, FL, U.S.A., October 2008. Students: Marlon Bright and Javier Delgado; and Mentors: **S. Masoud Sadjadi** and Rosa Badia.

- Marlon Bright, Javier Delgado, **S. Masoud Sadjadi**, and Rosa Badia. Application profiling and prediction in the grid environment. In *the poster presentation session of the 6th Latin American Grid (LA Grid) Summit*, Florida Atlantic University, Boca Raton, FL, U.S.A., October 2008.
- Selim Kalayci, **S. Masoud Sadjadi**, and Gargi S. Dasgupta. Pattern based fault-tolerance at workflow management systems. In *the poster presentation session of the 6th Latin American Grid (LA Grid) Summit*, Florida Atlantic University, Boca Raton, FL, U.S.A., October 2008.
- **S. Masoud Sadjadi**, Javier Muñoz, Diego Lopez, Javier Figueroa, Xabriel J. Collazo-Mojica, Alex Orta, Michael McFailand, David Villegas, Rosa Badia, Pat Welsh, Raju Rangaswami, Shu Shimizu, and Hector A. Duran Limon. Transparent grid enablement of WRF using a profiling, code inspection, and modeling approach. In *Poster Presented in the 5th Lating American Grid (LA Grid) Summit*, The IBM T.J. Watson Research Center, NY, U.S.A., September 2007.
- **S. Masoud Sadjadi**, Steve Luis, Khalid Saleem, Donald Llopis, Javier Munoz, Diego Lopez, Javier Figueroa, David Villegas Castillo, Selim Kalayci, Pat Welsh, Shu-Ching Chen, Anthony Praino, and Hugh Willoughby. The latin american (la) grid weather research and forecast (WRF) portal. In *Poster Presented in the 5th Lating American Grid (LA Grid) Summit*, The IBM T.J. Watson Research Center, NY, U.S.A., September 2007.
- Liana Fong, **S. Masoud Sadjadi**, Yanbin Liu, Ivan Rodero, David Villegas, Selim Kalayci, Norman Bobrof, and Julita Corbalan. The la grid meta-scheduling project. In *Poster Presented in the 5th Lating American Grid (LA Grid) Summit*, The IBM T.J. Watson Research Center, NY, U.S.A., September 2007.
- Gargi B Dasgupta, Liana Fong, **S. Masoud Sadjadi**, Onyeka Ezenwoye, Balaji Viswanathan, Selim Kalayci, and David Villegas Castillo. Fault-tolerant job-flow management in grid environment. In *Poster Presented in the 5th Lating American Grid (LA Grid) Summit*, The IBM T.J. Watson Research Center, NY, U.S.A., September 2007.
- **S. M. Sadjadi**, J. C. Martinez, L. Atencio, T. Soldo, R. Badia, and J. Ejarque. Transparent grid enablement using transparent shaping and grid superscalar. In *Poster Presented in the IBM Technology Leadership Conference*, Florida International University, Miami, FL 33199, October 2006.
- Tao Li, **S. M. Sadjadi**, Charles Perng, and Abdi Salahshour. Data mining for autonomic system management: A case study at fiu-scis. In *Proceedings of the NON Confidential Poster at The 4th Proactive Problem Prediction, Avoidance and Diagnosis Conference (PPPADC 2006)*, IBM T. J. Watson Research Center, Yorktown Heights, New York, April 2006.
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Science and Engineering Poster Workshop, East Lansing, Michigan, May 2004.

- **S. M. Sadjadi**, P. K. McKinley, and E. P. Kasten. Metasockets: Run-time support for adaptive communication services. In *In Addendum to the Proceedings of the International Symposium on Distributed Objects and Applications (DOA)*, pages 42-45, Irvine, CA, November 2002.

Presented Papers and Invited Lectures

- Global CyberBridges: A Model Global Collaboration Infrastructure for E-Science Between the United States and International Partners. ELI Web Seminar, July 20, 2009.
- Task decomposition for adaptive data staging in workflows for distributed environments. *Presented at the 21st International Conference on Software Engineering and Knowledge Engineering (SEKE 2009)*, Boston, MA, July 2009.
- Web services reliability patterns. *Presented at the 21st International Conference on Software Engineering and Knowledge Engineering (SEKE 2009)*, Boston, MA, July 2009.
- Grid enablement of scientific applications on TeraGrid. *Presented at the TeraGrid 2009 Conference*, Arlington, Virginia, June 2009.
- Experimental study of large-scale computing on virtualized resources. *Presented at the 3rd International Workshop on Virtualization Technologies in Distributed Computing (VTDC 2009) of the 6th International Conference on Autonomic Computing and Communications (ICAC-2009)*, Barcelona, Spain, June 2009.
- A learning and collaboration platform based on SAGE. *Presented at the 14th Western Canadian Conference on Computing Education (WCCCE 2009)*, Simon Fraser University, Vancouver, Canada, May 2009.
- PIRE: A global living laboratory for cyberinfrastructure application enablement. *Presented at the Tapia Celebration of Diversity in Computing 2009 (Tapia'09)*, Portland, Oregon, April 2009.
- Research experiences for undergraduates: Autonomic computing research at FIU. *Presented at the Tapia Celebration of Diversity in Computing 2009 (Tapia'09)*, Portland, Oregon, April 2009.
- Global CyberBridges: A Model Global Collaboration Infrastructure for E-Science between the United States and International Partners. ELI 2009 Annual Meeting Workshop, Orlando, Florida, Jan. 22, 2009.
- Design of a fault-tolerant job-flow manager for grid environments using standard technologies, job-flow patterns, and a transparent proxy. *Presented at the 20th International Conference on Software Engineering and Knowledge Engineering (SEKE'2008)*, San Francisco Bay, USA, July 2008.
- A language-based approach to addressing reliability in composite web services. *Presented at the 20th International Conference on Software*

Engineering and Knowledge Engineering (SEKE'2008), San Francisco Bay, USA, July 2008.

- Grid-Based WRF Modeling. *Invited Talk at the first Taylor Engineering Research Institute Workshop*, University of North Florida, March 25, 2008.
- Transparent grid enablement of weather research and forecasting. *The Mardi Gras Conference 2008 - Workshop on Grid-Enabling Applications*, Baton Rouge, Louisiana, USA, January 2008.
- LA Grid Research Outlook for 2008: Utilizing and Integrating Four LA Grid Projects to Support On-Demand Multi-Scale Weather Modeling. *Invited Talk at Universitat Politènica de Catalunya, Barcelona, Spain, December 21, 2007.*
- Form LA Grid to PIRE: Building an Ecosystem for Collaborative Computing Research and Education. *Invited Talk at Universidad Complutense de Madrid, Madrid, Spain, December 20, 2007.*
- Formative assessment of the effectiveness of collaboration in GCB. *Presented at the International Conference on Information Society (i-Society 2007)*, Merrillville, Indiana, USA, October 2007.
- Improving separation of concerns in the development of scientific applications. *Presented at the Nineteenth International Conference on Software Engineering and Knowledge Engineering (SEKE'2007)*, Boston, USA, July 2007.
- TRAP.NET: A realization of transparent shaping in .NET. *Presented at the Nineteenth International Conference on Software Engineering and Knowledge Engineering (SEKE'2007)*, Boston, USA, July 2007.
- A communication virtual machine. *Presented at the IBM Technology Leadership Conference*, Florida International University, Miami, FL 33199, October 2006.
- Transparent grid enablement using transparent shaping and grid superscalar. *Presented at the IBM Technology Leadership Conference*, Florida International University, Miami, FL 33199, October 2006.
- A user-centric network communication broker for multimedia collaborative computing. *Presented at the Second International Conference on Collaborative Computing (CollaborateCom 2006)*, Atlanta, Georgia, USA, November 2006.
- A communication virtual machine. *Presented at the 30th Annual International Computer Software and Applications Conference (COMPSAC 2006)*, Chicago, U.S.A., September 2006.
- Grid Enablement of Hurricane Mitigation Applications. *Presented at the Second Latin American Face-2-Face Meeting,* Florida International University, Miami, May 2006.
- MetaScheduling and Jobflow in Grid Computing Environments. *Presented at the Second Latin American Face-2-Face Meeting,* Florida International University, Miami, May 2006.

- Transparent Autonomization: A Practical Approach to Pervasive and Autonomic Computing. *Presented at the UTEP Computer Science Colloquium,* University of Texas, El Paso, August 2005.
- Using transparent shaping and web services to support self-management of composite systems. *Presented at the International Conference on Autonomic Computing (ICAC'05)*, Seattle, Washington, June 2005.
- Transparent shaping of existing software to support pervasive and autonomic computing. *Presented at the first Workshop on the Design and Evolution of Autonomic Application Software 2005 (DEAS'05), in conjunction with ICSE 2005*, St. Louis, Missouri, May 2005.
- Transparent Shaping: A Practical Approach to Pervasive and Autonomic Computing. *Presented at the School of Computer Science Colloquium,* Florida International University, Miami, February 2005.
- Transparent self-optimization in existing CORBA applications. *Presented at the International Conference on Autonomic Computing (ICAC-04)*, pages 88-95, New York, NY, May 2004.
- Generation of self-optimizing wireless network applications. *Presented at the International Conference on Autonomic Computing (ICAC-04)*, pages 310-311, New York, NY, May 2004.
- Transparent Shaping of Software for Pervasive and Autonomic Computing. *Presented at the School of Computer Science Colloquium,* Florida International University, Miami, April 2004.
- Transparent Shaping of Software for Adaptable Pervasive Computing. *Presented at CIS Seminar Series,* University of Michigan, Dearborn, March 2004.
- Transparent Shaping of Software for Adaptable Pervasive Computing. *Presented at the NEC Americas Laboratory,* Princeton, NJ, February 2004.
- Metasockets: Run-time support for adaptive communication services. *Presented at the International Symposium on Distributed Objects and Applications (DOA)*, Irvine, CA, November 2002.

Technical Reports

- Farshad A. Samimi, Philip K. McKinley, **S. Masoud Sadjadi**, and Peng Ge. Kernel-middleware interaction to support adaptation in pervasive computing environments. Technical Report MSU-CSE-04-30, Department of Computer Science, Michigan State University, East Lansing, Michigan, August 2004.
- Philip K. McKinley, **S. Masoud Sadjadi**, Eric P. Kasten, and Betty H. C. Cheng. A taxonomy of compositional adaptation. Technical Report MSU-CSE-04-17, Department of Computer Science, Michigan State University, East Lansing, Michigan, May 2004.
- Zhinan Zhou, Philip K. McKinley, and **S. Masoud Sadjadi**. On quality-of-service and energy consumption tradeoffs in fec-encoded audio streaming. Technical Report MSU-CSE-04-16, Department of Computer Science, Michigan State University, East Lansing, Michigan, April 2004.

- **S. M. Sadjadi** and P. K. McKinley. A survey of adaptive middleware. Technical Report MSU-CSE-03-35, Computer Science and Engineering, Michigan State University, East Lansing, Michigan, December 2003.
- P. K. McKinley, Z. Zhou, and **S. M. Sadjadi**. Tradeoffs between QoS and energy consumption in FEC-supported wireless handheld computers. Technical Report MSU-CSE-03-34, Department of Computer Science, Michigan State University, East Lansing, Michigan, December 2003.
- **S. M. Sadjadi** and P. K. McKinley. Supporting transparent and generic adaptation in pervasive computing environments. Technical Report MSU-CSE-03-32, Department of Computer Science, Michigan State University, East Lansing, Michigan, September 2003.
- **S. M. Sadjadi**, P. K. McKinley, R. E. K. Stirewalt, and B. H.C. Cheng. TRAP: Transparent reflective aspect programming. Technical Report MSU-CSE-03-31, Computer Science and Engineering, Michigan State University, East Lansing, Michigan, November 2003.
- **S. M. Sadjadi** and P. K. McKinley. ACT: An adaptive corba template to support unanticipated adaptation. Technical Report MSU-CSE-03-22, Department of Computer Science, Michigan State University, East Lansing, Michigan, August 2003.
- **S. M. Sadjadi**, P. K. McKinley, and E. P. Kasten. Metasockets: Run-time support for adaptive communication services. Technical Report MSU-CSE-02-22, Department of Computer Science, Michigan State University, East Lansing, Michigan, July 2002.
- Z. Yang, B. H.C. Cheng, R. E. K. Stirewalt, J. Sowell, **S. M. Sadjadi**, and P. K. McKinley. An aspect-oriented approach to dynamic adaptation. Technical Report MSU-CSE-02-21, Department of Computer Science, Michigan State University, East Lansing, Michigan, July 2002.
- E. P. Kasten, P. K. McKinley, **S. M. Sadjadi**, and R. E. K. Stirewalt. Separating introspection and intercession to support metamorphic distributed systems. Technical Report MSU-CSE-02-1, Department of Computer Science, Michigan State University, East Lansing, Michigan, January 2002.

Funded Research

1. Sponsor: Kaseya International Shared Services, Sarl
   Title: IT Automation Certificate Portal
   PI: **S. M. Sadjadi**
   Amount: **$167,200**
   Duration: 04/27/09-06/01/10

2. Sponsor: TeraGrid
   Title: Grid Enablement of Scientific Applications on TeraGrid
   PI: **S. M. Sadjadi**
   Amount: **$12,000;** 200,000 resource hours; one month of consulting; one year of technical support. I recently received a supplement award for TeraGrid Roaming.
   Duration: 12/1/08-11/30/09

3. Sponsor: Kaseya International Shared Services, Sarl
   Title: IT Automation Research and Education
   PI: **S. M. Sadjadi**
   Amount: **$122,000**
   Duration: 10/1/08-9/30/09

4. Sponsor: National Science Foundation (NSF), CREST
   Title: CREST: Center for Innovative Information Systems Engineering
   Subproject 5 – Complex System Modeling, Analysis and Realization (CS-MAR)
   PI: Xudong He; Co-PIs: **S. M. Sadjadi**, Shu-Ching Chen, Peter Clarke, Jason Liu
   Award Number: HRD-0833093
   Account Number:
   Amount: **$825,000**
   Duration: 8/1/08-7/31/13

5. Sponsor: Florida International University, University Graduate School, RUGS
   Title: A Student-Driven Distinguished Lecture Series at the School of Computing and Information Sciences at FIU
   PI: **S. M. Sadjadi**
   Account Number: 202200601
   Amount: **$3,000**
   Duration: 8/14/08 – 8/13/09

6. Sponsor: National Science Foundation (NSF), PIRE
   Title: A Global Living Laboratory for Cyberinfrastructure Application Enablement
   PI: **S. M. Sadjadi**; Co-PIs: Yi Deng (PI for the first 2 years of this project), S. Chen, B. Furht, and P. Martinez
   Amount: **$2.27 million**
   Duration: 9/15/07 – 8/31/11
   Note: After an internal competition at FIU (one of the three winners with the score of %96.3) and a two-stage competition with 500 proposals, only 20 or 4% were selected for award.

7. Sponsor: IBM, Award for Research Support
   Title: Transparent Grid Enablement of the Weather Research and Forecast code.
   PI: **S. M. Sadjadi**
   Amount: **$20,000**
   Duration: 9/1/07- 8/31/08
   Account: 202200101

8. Sponsor: IBM, Award for Research Support
   Title: Design and development of the LA Grid MetaScheduler at FIU.
   PI: **S. M. Sadjadi**
   Amount: **$20,000**

Duration: 9/1/06- 8/31/07

9. Sponsor: National Science Foundation (NSF), CI-TEAM Implementation Project,
   Title: Global CyberBridges (GCB): A Model Global Collaboration Infrastructure for e-Science between US and International Partners
   Award Number: OCI-0636031
   PI: Heidi Alvarez; Co-PI: P. W Arzberger, J. Ibarra, K. Kumar, and **S. M. Sadjadi**
   Amount: **$765,000**
   Duration: **10/2/06 - 12/31/09**
   Note: S. Masoud Sadjadi is the sole PI of the sub award to the School of Computing and Information Sciences.

10. Sponsor: National Science Foundation (NSF), CREST Supplement
    Title: Development of New Simulation Software for Advanced Energy Systems
    PI: Xudong He; Co-PI: **S. M. Sadjadi**, N. Monroe, and C. Haynes
    Amount: **$100,000**
    Duration: 7/1/06 - 6/30/07

11. Sponsor: National Science Foundation (NSF), REU
    Title: Autonomic Computing Research at FIU
    PI: M. Milani; Co-PI: T. Li; Senior Investigators: **S. M. Sadjadi**, R. Rangaswami, P. Clarke, and C. Zhang
    Amount: **$300,000**
    Duration: 03/15/06 - 03/14/09
    Note: NSF limited only one PI and one Co-PI for REU proposals.

12. Sponsor: IBM, Award for Research Support
    Title: Grid Enablement of Hurricane Mitigation Applications
    PI: **S. M. Sadjadi**
    Amount: **$40,000**
    Duration: 6/1/06- 5/31/07
    Note: A check for the amount of $40K was awarded to the School of Computing and Information Sciences at FIU to support Sadjadi's students working on the Grid Enablement Project, which is one of the major projects of the Latin American Grid (LA Grid) initiative.

13. Sponsor: IBM, Shared University Research (SUR)
    Title: Combining Knowledge Discovery and Adaptive Software Techniques to Build Autonomic Systems
    PI: T. Li; Co-PI: **S. M. Sadjadi**
    Amount: **$50,000**
    Duration: 6/1/05- 5/31/06
    Note: Brand new computer facilities including two servers, one storage, and ten desktop computers were awarded to FIU to establish the Autonomic

Computing Research Laboratory (ACRL). See the attached documents for the details of the equipments.

Patent Disclosures

- Yi Deng, S. Masoud Sadjadi, P. Clarke, V. Hristidis, C. Zhang, R. Rangaswami, and S. Luis. Communication Virtual Machine (CVM). Pending.

Teaching Experience

University Teaching Experience

- Teaching Introduction to Software Engineering (CEN 4010), Florida International University, spring 2005.
- Teaching Advanced Software Engineering (CEN 5011), Florida International University, fall 2004.
- Teaching assistant for Introduction to Programming (CSE 231), Michigan State University, spring and summer 2000.
  Duties: Explained the laboratory exercises, graded the students' programs, and helped students with their programming problems.
- CORBA Overview, as part of Advanced Operating Systems (CSE 812), lectures developed and taught as substitute lecturer, Michigan State University, spring 2003.
- Java Overview, as part of Computer Networks (CSE 422), lectures developed and taught as substitute lecturer, Michigan State University, spring and fall 2003.

Industrial Tutorials developed and taught

- Java in Five Days, Iran University Press, Tehran, Iran, fall 1999.
- Oracle in Two Days, Iran University Press, Tehran, Iran, spring 1998.
- Advanced Topics in Novell NetWare, Transportation and Terminal Organization, Tehran, Iran, fall 1997.
- Advanced Topics in Windows NT, Ghadir Corporation, Tehran, Iran, fall 1996.
- Introduction to Windows NT, Ghadir Corporation, Tehran, Iran, fall 1996.
- Advanced Topics in Novell NetWare, Tehran Information Consultants Corporation, Tehran, Iran, fall 1992.
- Introduction to Novell NetWare, Tehran Information Consultants Corporation, Tehran, Iran, fall 1992.

Teaching Innovation and Other Relevant Teaching Activities

Capstone I

- After 7 successful years of teaching and coordinating all senior projects for the School of Computing and Information Sciences, I decided to take the quality, and at the same time, rate of graduation of our senior project course to the next level of achievement. In Fall 2019 and Spring 2020, I have worked on creating a new course, namely, Capstone I, that would introduce to our junior students the process of agile software development and get them involved in realistic semester-long projects offered by industry and research faculty. This is a one-credit course that would make our students ready for Capstone II. Senior Project (3 credits) will be offered for several semesters in the future and will gradually be replaced by Capstone I and II.

- In Summer 2020, we started offering this course. In Summer 2020, 69 students took this course for the first time, in Fall 2020, 102, and in Spring 2021, 84 students took and successfully passed this course.

Capstone II

- After 7 successful years of teaching and coordinating all senior projects for the School of Computing and Information Sciences, I decided to take the quality, and at the same time, rate of graduation of our senior project course to the next level of achievement. In Fall 2019 and Spring 2020, I have worked on creating a new course, namely, Capstone II, that would be a follow up on Capstone I. It would use what students have learned in Capstone I and would provide them with an opportunity to work in an Agile team of software developers working on realistic semester-long projects offered by industry and research faculty. This is a two-credit course that would need to be taken during the last semester and right before graduation from our school. Senior Project (3 credits) will be offered for a number of semesters in the future and will gradually be replaced by Capstone I and II.
- In Fall 2020, we started offering this course. In Fall 2020, 61 students took this course for the first time, and in Spring 2021, 84 students took and successfully passed this course. Students who have taken Capstone I proved to become much more prepared when they took their Capstone II projects.

CIS 4911 - Senior project

- I took over CIS-4911, the Senior Project course, in Fall 2012. This course requires a tremendous amount of effort and coordination among the faculty members, industry mentors, and student team members. We have introduced Capstone I in Summer 2020 and Capstone II in Fall 2020 and now we offer all three courses to accommodate our students. Note that even though we have been offering Capstone I and II since Fall 2020, we have still been accommodating students who wanted to graduate within one semester. In Fall 2020, there were 48, and in Spring 202, there were 21 senior project students. We hope that this disappears over time and all our students take the route of Capstones I & II eventually.
- I continue to spend countless hours every week to make sure our process for monitoring and managing senior projects is refined and custom-tuned to each project. Some of these projects are recurring ones as we have been promoting the idea of multi-semester projects. These multi-semester projects helped us demonstrate our ability to conduct multi-year projects and were instrumental in the VIP award that we received from Georgia Tech. In general, I am very pleased with the outcome of this course so far. According to the feedback that I have received from our students, faculty members, and industry partners, the quality of projects and the level of preparedness of our students have continued to improve during the past five years. I am very hopeful that this course will only get better over time.

We have developed and still making improvements on four supporting projects, namely, Senior Project Web Site, Mobile Judge, Virtual Job Fair, and Collaborative Platforms. Once these projects become fully productive, the management and coordination of this course would have a much higher quality and the outcome of this course is expected to be improved significantly. I put a significant amount of my time to improve and refine the management of the senior projects from the traditional waterfall model to an Agile Scrum approach.

IDS 2947 - Vertically Integrated Projects (VIP)

- We started offering this course in Spring 2018 and it has ever since been available to all FIU students to join our multi-year, multi-discipline, faculty-led research projects coordinated by our KFSCIS.
- Objective(s) of Course:
- Understand teamwork in real-world scenarios, develop complete solutions working in inter-disciplinary groups, improve presentation and writing skills, and learn from other domains.
- Course Outcomes:
- 1. Prepare a research paper in the format appropriate to a particular field/domain.
- 2. Present a visual summary of a research project using some conventional display medium (e.g., presentation slides, poster, demo, etc.)
- 3. Give an oral presentation of the findings of some scholarly work.

IDS 3948 - Vertically Integrated Projects (VIP)

- We started offering this course in Summer 2017 and it has ever since been available to all FIU students to join our multi-year, multi-discipline, faculty-led research projects coordinated by our KFSCIS.
- Objective(s) of Course:
- Understand teamwork in real-world scenarios, develop complete solutions working in inter-disciplinary groups, improve presentation and writing skills, and learn from other domains.
- Course Outcomes:
- 1. Prepare a research paper in the format appropriate to a particular field/domain.
- 2. Present a visual summary of a research project using some conventional display medium (e.g., presentation slides, poster, demo, etc.)
- 3. Give an oral presentation of the findings of some scholarly work.
- 4. Identify differing methodologies for discovering new knowledge.
- 5. Utilize libraries/repositories to find literature relevant to a specific research topic.
- 6. Critique the relevance and importance of previous work to a current research topic.

IDS 4963 - Vertically Integrated Projects (VIP)

- We started offering this course in Summer 2017 and it has ever since been available to all FIU students to join our multi-year, multi-discipline, faculty-led research projects coordinated by our KFSCIS.
- The Vertically Integrated Projects (VIP) Program unites undergraduate education and faculty research in a team-based context. Undergraduate VIP students earn academic credits, while faculty and graduate students benefit from the design/discovery efforts of their teams. This allows creating long-term research and development experiences while working on real-world projects with FIU research faculty and external business mentors. VIP extends the academic design experience beyond a single semester, with students participating for up to three years. It provides the time and context to learn and practice professional skills, makes substantial contributions, and experience different roles on large multidisciplinary design/discovery teams. This also cultivates leadership and mentoring. The long-term nature of VIP creates an environment of mentorship, with faculty and graduate students mentoring teams, experienced students mentoring new members, and students moving into leadership roles as others graduate. VIP provides a great benefit to faculty research programs and its university, which is part of the FIU Beyond 2020 plan. VIP attracts students from many disciplines and enables the completion of large-scale design/discovery projects, strengthening and expanding faculty research portfolios. Note that the Computer Science Senior Project class together with some students from the Electrical and Computer Engineering Senior Design class has provided a way to test this larger concept that we are proposing.
- Objective(s) of Course:
- Understand teamwork in real-world scenarios, develop complete solutions working in inter-disciplinary groups, improve presentation and writing skills, and learn from other domains.
- Course Outcomes:
- 1. Prepare a research paper in the format appropriate to a particular field/domain. 2. Present a visual summary of a research project using some conventional display medium (e.g., presentation slides, poster, demo, etc.)
- 3. Give an oral presentation of the findings of some scholarly work.
- 4. Identify differing methodologies for discovering new knowledge.
- 5. Utilize libraries/repositories to find literature relevant to a specific research topic.
- 6. Critique the relevance and importance of previous work to a current research topic.
- 7. Discuss issues of privacy and confidentiality in active research.
- 8. Describe the consequences of, and strategies for avoidance of plagiarism.
- 9. Demonstrate individual responsibility in the context of collective effort.
- 10. Articulate requirements for a successful collaborative effort.

- 11. Demonstrate acquisition of knowledge from an area outside of one's expertise.

Professional Services

Panelist:

- Panelist and Remote Reviewer, National Science Foundation, NSF.
- Panelist and Remote Reviewer, The Luxembourg National Research Fund.
- Florida Sea Grant

Editorial Board Member:

- Editorial Board Member, The International Journal of Computing & Information Technology, IJCIT
- Area Editor, World Scientific, International Journal of Software Engineering and Knowledge Engineering

Conference and Workshop Organizing Committee:

- Program Committee Member, International Program Committee - 15th CEISEE, The International Program Committee, of the 15th China-Europe International Symposium on Software Engineering Education
- Program Committee Member, The Thirty First International Conference on Software Engineering and Knowledge Engineering (SEKE 2018), KSI Research Inc., USA
- Advisory Committee Member, The Thirty First International Conference on Software Engineering and Knowledge Engineering (SEKE 2018), KSI Research Inc., USA
- Program Committee Member, International Program Committee - 15th CEISEE, The International Program Committee, of the 15th China-Europe International Symposium on Software Engineering Education
- Program Committee Member, IEEE BDCloud 2018 - 8th IEEE International Conference on Big Data and Cloud Computing.
- Program Committee Member, The Thirtieth International Conference on Software Engineering and Knowledge Engineering (SEKE 2018), KSI Research Inc., USA
- Advisory Committee Member, The Thirtieth International Conference on Software Engineering and Knowledge Engineering (SEKE 2018), KSI Research Inc., USA
- Program Committee Member, Computer Science and Software Engineering (CSSE2017).
- Program Committee Member, The 21st Computer Science and Software Engineering (CSSE2017).
- Program Committee Member, The 29th International Conference on Software Engineering and Knowledge Engineering (SEKE), 2017.
- Advisory Committee Member, The 29th International Conference on Software Engineering and Knowledge Engineering (SEKE), 2017.

- Program Committee Co-Chair of the 22nd International Conference on Software Engineering and Knowledge Engineering (SEKE), 2010.
- Publicity Co-Chair for the 10th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid 2010) to be held in Melbourne, Australia in May 2010.
- Publicity Chair for the International Conference on Autonomic Computing (ICAC), 2010.
- Session Organizer for the 21st International Conference on Software Engineering and Knowledge Engineering (SEKE), 2009: "Software Engineering of Autonomic Grid Computing Systems and Applications".
- Publicity Co-Chair for the Second International Conference on Contemporary Computing, 2009.
- Publicity Co-Chair for the 21st International Conference on Software Engineering and Knowledge Engineering (SEKE), 2009.
- Publicity Co-Chair for the International Conference on Autonomic Computing (ICAC), 2009.
- Program Co-Chair for the IEEE International Conference on Networking, Sensing and Control (ICNSC), 2008.
- Steering Committee Member for LA Grid, 2008.
- Kaseya Influencer Committee Member, 2008-09.
- Member of Florida LambdaRail Research Advisory Council, 2008.
- Demo/Exhibits Co-Chair for the Seventeenth International Symposium on High-Performance Distributed Computing (HPDC), 2008.
- Publicity Co-Chair for the CCGrid Workshop on Autonomics for Grids and Datacenters, 2008.
- Publicity Co-Chair for the 20th International Conference on Software Engineering and Knowledge Engineering (SEKE), 2008.
- Publicity Co-Chair for the International Conference on Autonomic Computing (ICAC), 2008.
- Session Organizer for the 20th International Conference on Software Engineering and Knowledge Engineering (SEKE), 2008: "Software Engineering of Autonomic Grid Computing Systems and Applications".
- Member of Florida LambdaRail Research Advisory Council, 2007.
- Steering Committee Member for LA Grid, 2007.
- Registration Chair for the 2006 IEEE International Conference on Networking, Sensing and Control (ICNSC), Ft. Lauderdale, 2006.
- Steering Committee Member for LA Grid, 2006.
- Publicity Co-Chair, SEKE
- Publicity Co-Chair, ICCC
- Conference Program Co-Chair, IEEE International Conference on Networking, Sensing and Control
- Conference Program Co-Chair, International Conference on Software Engineering and Knowledge Engineering
- Registration Chair, IEEE ICNSC-2006
- Demo/Exhibit Chair, HPDC
- Publicity Co-Chair, ICAC

- Publicity Co-Chair, CCGrid
- Registrations Chair for the 2006 IEEE International Conference on Networking, Sensing and Control.
- Program Committee Member for the 4th ACS/IEEE International Conference on Computer Systems and Applications.

Referee for Journals, Magazines, Conferences, and Workshops:

- Program Committee Member for the International Conference on Autonomic Computing (ICAC), 2010.
- Program Committee Member for the 5th International Conference on Grid and Pervasive Computing (GPC), 2010.
- Program Committee Member for the 3rd International Workshop on Latin American Grid (LA Grid), 2009.
- International Program Committee Member for Software Engineering Research, Management and Applications (SERA 2009), Haikou, Hainan Island, China, December 2-4, 2009.
- Program Committee Member for the 7th International Conference on Service Oriented Computing (ICSOC 2009) will be held jointly with ServiceWave 2009 in Stockholm (Sweden), November 17 - 20, 2009.
- Program Committee Member for the First International Conference on Emerging Network Intelligence (Emerging), 2009.
- Referee for Springer Journal of Mobile Networks and Applications (MONE), 2009.
- Program Committee Member for the 13th International Conference on Software Engineering and Applications (SEA), 2009.
- Program Committee Member for the 2nd International Conference on Computer Science and its Applications (CSA-09), 2009.
- Book on Software Engineering for Self-Adaptive Systems, SEfSAS 2008 LNCS.
- Program Committee Member for the ICSE 4th International Workshop on Software Engineering for Adaptive and Self-Managing Systems (SEAMS 2009), 2009.
- Program Committee Member for the International Workshop on Cloud Computing (Cloud 2009), 2009.
- Program Committee Member for the 21st International Conference on Software Engineering and Knowledge Engineering (SEKE), 2009.
- Referee for Elsevier Journal of Parallel and Distributed Computing (JPDC), 2009
- Program Committee Member for the 9th IEEE International Symposium on Cluster Computing and the Grid (CCGrid), 2009.
- Program Committee Member for the 11th IEEE International Conference on High Performance Computing and Communications (HPCC), 2009.
- Program Committee Member for the International Conference on Autonomic Computing (ICAC), 2009.
- Program Committee Member for the 4th International Conference on Grid and Pervasive Computing (GPC), 2009.

- Program Committee Member for the 12th International Conference on Software Engineering and Applications (SEA), 2008.
- Program Committee Member for the Fifth International Conference on Distributed Computing and Internet Technology (ICDCIT-08), 2008.
- Program Committee Member for the IEEE International Workshop on Autonomic Service Discovery and Management (ASDM'08), 2008.
- Program Committee Member for the 20th International Conference on Software Engineering and Knowledge Engineering (SEKE), 2008.
- Program Committee Member for the International Conference on Autonomic Computing (ICAC), 2008.
- Program Committee Member for the 3rd International Workshop on Software Engineering for Adaptive and Self-Managing Systems (SEAMS-2008), 2008.
- Program Committee Member for the Fifth High-Performance Grid Computing Workshop (HPGC-2008), 2008.
- Program Committee Member for the 3rd International Conference on Grid and Pervasive Computing (GPC'08), 2008.
- Referee for the Journal of High Speed Networks (JHSN), 2007.
- Program Committee Member for Middleware 2007 Workshop on Modeling Software Architectures of Middleware-intensive Applications (MoSAMinA 2007), 2007.
- Program Committee Member for the International Conference of Software Engineering & Knowledge Engineering (SEKE), 2007.
- Program Committee Member for the 2nd International Workshop on Software Engineering for Adaptive and Self-Managing Systems (SEAMS), 2007.
- Program Committee Member for the 5th International Workshop on Self-Adaptive and Autonomic Computing Systems (SAACS), 2007.
- Program Committee Member for the 4th International Conference on Autonomic and Trusted Computing (ATC), 2007.
- Program Committee Member for the 3rd International Conference on Autonomic and Trusted Computing (ATC), China, September 3-6, 2006.
- Program Committee Member for the ICSE-SEAMS 2006 Workshop on Software Engineering for Adaptive and Self-Managing Systems (SEAMS), May 21-22, 2006, Shanghai, China.
- Program Committee Member for the fourth ACS/IEEE International Conference on Computer Systems and Applications (AICCSA-06), Dubai/Sharjah, UAE, March 8-11, 2006.
- Program Committee Member for the CSICC 2006, the first International Conference on Computer Society of Iran Computer Conference (CSICC), Tehran, Iran, January 24-26, 2006.
- Referee for Elsevier Journal of Parallel and Distributed Computing (JPDC), 2008
- Referee for Elsevier Journal of Systems and Software (JSS), 2008
- Referee for IEEE Journal on Systems, Man, and Cybernetics (SMCC), 2008

- Referee for Journal of Supercomputing, 2008
- Referee for International Journal of Software Engineering and Knowledge Engineering (IJSEKE), 2008
- Referee for IEEE's Transactions on Parallel and Distributed Systems (TPDS), 2008
- Referee for Journal of High Speed Networks (JHSN), 2008
- Referee for Iranian Journal of Electrical and Computer Engineering (IJECE), 2008
- Referee for the International Journal of Computers and Applications, 2006.
- Referee for the Journal of Autonomic and Trusted Computing (JoATC), 2006.
- Referee for the Journal of High Speed Networks (JHSN), 2006.
- Referee for the Journal of Systems and Software (JSS), 2006.
- Referee for the IEEE Transactions on Software Engineering (TSE), 2005.
- Referee for the Elsevier Journal of System and Software (JSS), 2005.
- Referee for the Special Issue of Wiley InterScience "Software, Practice and Experience" (SP&E) journal on "Experiences with Auto-adaptive and Reconfigurable systems", 2004-2005.
- Reviewer, Sustainability, Sustainability (ISSN 2071-1050; CODEN: SUSTDE) is an international, cross-disciplinary, scholarly, and open access journal of environmental, cultural, economic, and social sustainability of human beings. Sustainability provides an advanced forum for studies related to sustainability and sustainable development and is published monthly online by MDPI. The Society for Urban Ecology is affiliated with Sustainability and their members receive discounts of the article processing charge.
- Reviewer, Transactions on Cloud Computing.
- Reviewer, Journal: Future Generation Computer Systems.
- The International Conference of Software Engineering & Knowledge Engineering, 2005.
- IEEE Transactions on Software Engineering, 2005.
- The IEEE SoutheastCon, 2005.
- IEEE International Conference on Autonomic Computing, 2005.
- IEEE International Conference on Distributed Computing Systems, 2003, 2004 and 2005.
- IEEE SoutheastCon, Fort Lauderdale, Florida, 2005.
- Special Issue of Wiley InterScience "Software, Practice and Experience" journal on "Experiences with Auto-adaptive and Reconfigurable Systems".
- IEEE International Workshop on Future Trends in Distributed Computing Systems, 2003 and 2004.
- IEEE International Conference on Pervasive Computing and Communications, 2004.

- Adaptive and Evolvable Software Systems: Techniques, Tools, and Applications, a mini-track to the Software Technology Track for 2004 Hawaii International Conference on System Science, 2004.

External reviewer for Conferences and Workshops:

- The IEEE International Conference on Communications (ICC), 2009.
- The Conference on Self-Managing Systems and Context-Aware Computing (CASEMANS), 2008
- The Middleware Conference, 2006.
- The 6th International Conference on Quality Software (QSIC), 2006.
- The IEEE International Conference on Distributed Computing Systems (ICDCS), 2006.
- The 2005 IEEE International Conference on Information Reuse and Integration, IEEE IRI-2005 (Knowledge Acquisition and Management), August 15-17, 2005, Hilton, Las Vegas, Nevada, USA.
- The Fifth International Workshop on Software Engineering and Middleware (SEM 2005), Lisbon, Portugal, 5-6 September 2005, Co-located with ESEC/FSE'05.
- The 7th International Symposium on Distributed Objects and Applications (DOA), Agia Napa, Cyprus, Oct 31 - Nov 4, 2005.
- The International Conference of Software Engineering & Knowledge Engineering (SEKE), 2005.
- The IEEE International Conference on Autonomic Computing (ICAC), 2005.
- The IEEE International Conference on Distributed Computing Systems (ICDCS), 2005.
- The IEEE SoutheastCon, Fort Lauderdale, Florida, 2005.
- The IEEE International Conference on Distributed Computing Systems (ICDCS), 2004.
- The IEEE International Workshop on Future Trends in Distributed Computing Systems (FTDCS), 2004.
- The IEEE International Conference on Pervasive Computing and Communications, 2004.
- The IEEE International Workshop on Future Trends in Distributed Computing Systems (FTDCS), 2003.
- The IEEE International Conference on Distributed Computing Systems (ICDCS), 2003.

Departmental Committee Assignments:

- Recruitment Search Committee & Colloquium Coordinator
- Graduate Committee
- Undergraduate Committee
- Senior Project Committee
- Software Engineering Committees

University Committee Assignments:

- FIU Honors Society Faculty Advisor
- Iranian Students Organization Advisor

Member of IEEE and ACM.

Major Software Packages Designed and Developed

Robotics Academy Web Site: Our NSF supported project ($1M grant) has produced a Web Site that is composed of training simulations including: 1) Immersive Training for Robotic Information Processes (IT- RIP) for Planning and Design, developed for architects, designers and fabricators. This aids them to design with the robotic parameters and streamline design to fabrication processes; 2) IT-RIP for Operations, designed for construction professionals. This application provides learning modules on robotic operations such as pick and place, assembly, milling, and form making; and 3) IT-RIP Integration, developed for engineers which teaches integration of end of arm instruments such as grippers, and additive and subtractive manufacturing tools.

Baby Feed APP: The CAPLAN FOUNDATION and the CHILDREN'S TRUST funded the development and pilot testing of the "Baby Feed" App and Portals for Healthcare Professionals and Parents to improve infant diets. This software solution will enable assessment of infant diets and provide results and recommendations automatically, allowing parents to track their progress with the infant diet, and clinicians to see the results of the tracking from the parents.

NuMom App: We recognize the healthcare barriers and the needs of low-income mothers and low-income minority mothers where high morbidity and mortality exists. This app collects data on the healthcare needs for 3 different language speakers (English, Spanish and Creole) and differentiate the different needs for each group of mothers as cultural differences exists. It allows the healthcare providers to review the mother's healthcare needs.

Pediatrics Emergency Medicine App: Healthcare workers in emergency and urgent care settings who provide acute care to sick and injured children, including the nurse practitioners, physician assistants, residents in pediatric, emergency medicine and family medicine residency programs, fellows in pediatric emergency medicine, and attending physicians, are provided with evidence based, updated medical information quickly and clearly for the common medical emergencies that are seen in emergency departments and urgent care settings.

Snackability: The prevalence of overweight and obesity has become a major public health concern in the United States. Snacks contribute to the diet quality in youth, which is often poor. The "Snackability" app was developed following the ADDIE (analysis, design, development, implementation, and evaluation) model. The app was pilot tested with 12 non-nutrition college age students (18-25 years) using a mixed method approach. Participants were instructed to use the app for 2

weeks. The developed app had a simple score (0–10) and feedback. The higher the score, the healthier the snack is. The app feasibility and usability was significantly greater than 50% ($p < 0.05$). Participants reported that the app was a good way to help individuals select and consume healthy snacks and the feature that they liked most about the app was the output and creating awareness of snack intake.

BOLO (Be On the LookOut): In a close collaboration with the Pinecrest Police Department (PPD), we created a web application. BOLO allows for users (police officers and law enforcement support personnel) to create and distribute BOLO (Be on the Look Out) "Flyers" using the application templates. The flyers are then stored in a central database which is completely searchable by any of the template fields as well as a wild card search via free text fields. A basic PDF version of the BOLO is automatically created by the system when a new BOLO is created and distributed to the users via email. Users are able to choose BOLOs they want to receive.

Virtual Roll Call: Traditionally the first 15 minutes of a police officer's shift is spent at the station in a briefing room where the shift supervisor, commonly of sergeant rank, goes over a clipboard of information with the officers. Due to many factors, officers are not always present for roll call briefings. Officers may be in court, assigned to an overlapping shift or may have to start their tour early do to call volume. Virtual Roll call will allow for officers to be briefed on all the necessary information when feasible.

Patrol Shift Bid Scheduler: This Web Site assists the Village of Pincrest Police Department (and perhaps others in the future) with their scheduling needs. It beings with a work schedule being uploaded to the system. The officers will then use the program to bid for their spot to work based on seniority/assignment. Once everyone has bid, the program will generate a daily roster with who is and isn't working that includes other information such as vehicles being driven, specialties, etc. The officers can request days off in the program.

Vocabulary in Reading: One of the major challenges that English Language learners (ELL) as well as mainstream students face with is the lack of a reliable source to improve their academic words. There is no easy way to validate the easiness of text, which allows professors to select the appropriate materials for class. A challenging text is a wonderful way to propel students forward, yet something too hard to read can cause the opposite effect. Vocabulary in Reading Study (VIRS) is the solution to all these problems. We created an app for teachers who can take a picture of some text; that text, through OCR software, is sifted through a vocabulary profiler, sifting the words of the text into 6 categories: Academic words, STEM words, Low frequency words, Medium frequency, High frequency, Names, and Other, thereby, assisting teachers with choosing which words to focus on with their classes. In other words, it prioritizes words to focus on. VIRS has two separate options for English language learners and native

speakers. In each option, VIRS offers vocabulary practices and language tests according to the students' proficiency level. Meanwhile, it asks teachers to create a user name and password to sign in, thereby helping classroom teachers save their data for future use.

SkillCourt: It is an interactive athletic training system of illuminated target pads and its software application. Pads include touch and pressure sensors that report ball activity to the SkillCourt app. It monitors, analyzes and saves personal performance statistics via the app. It has countless variations of games. The concept focused on improving cognitive skills for a team or individualized Soccer.

Mobile Judge App: Graduating students in the School of Computing and Information Sciences partake in a showcase event where they demonstrate and explain their software solution. These events are attended by professionals and instructors in the field who are able to weigh in and give feedback on students' work and accomplishments. In an effort to provide a centralized platform that allows the course instructor to administer and invite Judges to the event – as well as expedite the process of grading students, Mobile Judge was created. Students, too, would be able to receive real-time updates of Judge grades and get feedback on their demo and presentation.

TRAP/J: A toolkit for generating application-specific adaptation infrastructure and weaving the infrastructure into an existing Java application transparently with respect to the application source code, Michigan State University, Fall 2003.

ACT: Adaptive CORBA template, a framework that enables interoperation among otherwise incompatible middlware frameworks, Michigan State University, Spring 2003.

MetaSockets: Meta-morphic sockets in Java that enable dynamic adaptation in existing Java applications with minimum modification, Michigan State University, 2002-2003.

TTO Web Site Package: A bilingual (English/Farsi) secure multi-tier web-based application for accessing TTO's distributed database through the web, Transportation and Terminal Organization, 1998.

Student Information Package: A software package for managing the records of students, from registration to graduation, Tarbiat Modares University, 1997-1998.

Specialized Dictionary Packages: Software packages for building specialized English/Farsi dictionaries, Iran University Press, 1995-1996.

Hospital Packages: A set of software packages written in C++ for computerizing hospital, pharmacy, and medical laboratory information, Tebb Va Rayaneh Corporation, 1992 - 1995.

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S. Masoud Sadjadi
Jan. 2022