

Thoshitha Thanushka Gamage, Ph.D.

Associate Professor

Department of Computer Science
Southern Illinois University Edwardsville
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Edwardsville, IL 62026-1656

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EDUCATION

Ph.D. in Computer Science 2011

Missouri University of Science and Technology

Dissertation: CEEME: Compensating Events based Execution Monitoring Enforcement for Cyber-Physical Systems

Advisor: Bruce McMillin

Committee: Mariesa Crow, Ali Hurson, Sriram Chellappan, Wei Jiang

GPA: 4.0/4.0

M.S. in Computer Science 2008

St. Cloud State University

Thesis: Performance Evaluation of Java Communication Methods for Conservative Approach Distributed Discrete Event Simulation

Thesis Advisor: Donald O. Hamnes

Committee: Jayantha Herath, Dennis Guster

GPA: 3.91/4.0

B.S. in Computer Engineering 2006

University of Peradeniya, Sri Lanka

GPA: 3.4/4.0

PROFESSIONAL EXPERIENCE

Associate Professor Aug 2020 - Present

Department of Computer Science, Southern Illinois University Edwardsville

www.cs.siu.edu/~tgamage

Assistant Professor Aug 2014 - Aug 2020

Department of Computer Science, Southern Illinois University Edwardsville

Assistant Research Professor Apr 2012 - Aug 2014

School of Electrical Engineering and Computer Science, Washington State University

Supervisors: Dave Bakken, Carl Hauser

- Responsibilities included develop and maintaining a research program supported by extramural funding, participate in mentoring graduate and undergraduate students in computer science, and generating research proposals
- co-supervised five students (3 Ph.D., 2 MS)
- Assisted in Design, architect, development, and implementation efforts of the GridStat adaptation, instrumentation, security, and trust research thrusts. Website: (www.gridstat.net)

Research Faculty Apr 2012 - Aug 2014
Trustworthy Cyber Infrastructure for the Power Grid (TCIPG)
www.tcpig.org

Research Faculty Apr 2012 - Aug 2014
Energy Systems Innovation Center, Washington State University
esic.wsu.edu

Postdoctoral Research Associate Dec 2011 - Apr 2012
Department of Computer Science, Missouri University of Science and Technology
Advisor: Bruce McMillin

- Lead software development efforts, refining specifications, developing architectures, coordinating resources, coding, developing and implementing test plans, and other aspects of the system development process of the Future Renewable Electric Energy Delivery and Management (FREEDM) project (www.freedm.ncsu.edu)

Graduate Research Assistant May 2008 - Dec 2011
Department of Computer Science, Missouri University of Science and Technology

- Conducted research on Cyber-Physical Systems (CPSs) security. The main contribution was the identification of confidentiality violations of cyber actions due to the inherent physical observability and cyber-physical interactions. Developed a novel information flow security based cyber action confidentiality violation mitigation scheme for CPSs
- Developed a distributed control algorithm to maximize renewable energy harvest and energy storage during peak generation hours, and minimize non-renewable resource usage for a smart grid with multiple standalone grid units for a smart grid capability for forward operating base camps (Leonard Wood Institute)
- Developed a control algorithm for resource management, including a touch-screen user control interface for a micro grid system. Implemented and field tested using an industrial strength PLC. (Leonard Wood Institute/ Air Force Research Laboratory #2 projects)

TEACHING EXPERIENCE

Associate Professor Aug 2020 - Present

Assistant Professor Aug 2014 - Aug 2020
Department of Computer Science, Southern Illinois University Edwardsville

- CS 463 - Cryptography SP '23 - '17, SP '15
Latest Course Website: <https://www.cs.siu.edu/~tgamage/courses/463S22/>
- CS 490 - Embedded Systems Security SP '16
Latest Course Website: <https://www.cs.siu.edu/~tgamage/archieved/S16/CS490/>
- CS 447 - Networks and Data Communication SP '23-19, FS '22-14, SS '20-15
Latest Course Website: <https://www.cs.siu.edu/~tgamage/courses/447S23/>
- CS 454 - Theory of Computation SP '23, FS '22, FS '17, FS '16, SS '16, FS '15
Latest Course Website: <https://www.cs.siu.edu/~tgamage/courses/454S23/>
- CS 456 - Design and Analysis of Algorithms SP '19-16, FS '20-14
Latest Course Website: <https://www.cs.siu.edu/~tgamage/archieved/S19/CS456/>

Assistant Research Professor

Apr 2012 - Aug 2014

School of Electrical Engineering and Computer Science, Washington State University

- CPTS 464/564 - Distributed Systems Concepts and Programming SP '13, '14
Enrollment: 15
 - A senior/graduate level class in fundamental distributed systems concepts. Conducted lectures and developed course curricula, homework assignments, quizzes, and programming projects that were based on **DeterLab** cyber-security experimentation and testing facility at USC ISI (<http://www.deter-project.org/>)
- CPTS 500 - Proseminar FS '12
Enrollment: 10
 - A graduate level seminar type class that introduces students how to conduct research in computer science, research methodologies, resources, and ethics

Graduate Teaching Assistant

May 2008 - Dec 2011

Department of Computer Science, Missouri University of Science and Technology

- CS 54 - Introduction to Programming Laboratory SP '08
Enrollment: ~35 in each section (3 sections)
Teaching effectiveness index: 3.5/4.0
 - Conducted lectures on introductory computer programming methodology in C++ for CS and engineering majors. Developed course materials, curricula, and lab sessions and performed grading and student evaluation duties accordingly
- CS 463 - Computer Security (lecture in advisor's absence) FS '09, '10, '11
 - Assisted advisor on teaching related duties including lecture in absence, and course material preparation for this graduate level course
- Annual summer camps for college-bound high school students SS '08
 - Jackling "Introduction to Engineering" futurestudents.mst.edu/summercamps/ and Computer Highly Interactive Programming (C.H.I.P.) Camp
 - Used **Alice** www.alice.org and **Storytelling Alice** to introduce programming concepts

Graduate Teaching Assistant

Sep 2006 - Dec 2007

Department of Computer Science, St. Cloud State University

- CS 169 - Computers in Society FS '06, SP, SS, FS '07
Avg. enrollment: 100 (15 in SS '07)
- Conducted lectures on introductory computer technology, usage, and basic computing skills for non-cs majors. Developed course materials, curricula, and lab sessions and performed grading and student evaluation duties accordingly
- Assisted M.S. Advisor in teaching by developing new hands-on-laboratory sessions for CS 610 Advanced Concepts in Operating Systems class using VMWare
- Developed a new course curricula and a set of Design Patterns laboratories for CS 680 Seminar in Computer Science class

Assistant Lecturer¹

Jan 2006 - Aug 2006

Faculty of Engineering, University of Peradeniya, Sri Lanka

- CE 202 - Computer Programming in Java SP '06

¹CE 204 and CE 313 as Teaching Assistant

- Enrollment: 96
- CE 204 - Digital System Design SP '06
Enrollment: 30
- CE 313 - Operating Systems SP '06
Enrollment: 30
- Conducted lectures on an introductory programming covering topics on basic programming concepts, programming methodology, and introductory data structures for sophomore level engineering students. Developed course material and lab sessions and performed grading and student evaluation duties accordingly
- Conducted recitation lab sessions for an introductory-level digital system design course for sophomore computer engineering students using Z80. Prepared and graded the lab sessions
- Conducted recitation lab sessions for an intermediate-level operating systems course for junior level computer engineering students using Linux OS. Prepared and graded the lab sessions

INDUSTRIAL EXPERIENCE

- Training Engineer** Oct 2004 - Mar 2005
Suntel telecommunications Ltd., Sri Lanka
- Training Engineer** Oct 2003 - Dec 2003
Ceylon Electricity Board, Sri Lanka

RESEARCH INTERESTS

TEACHING INTERESTS

- | | |
|--|--|
| <ul style="list-style-type: none"> • Computer Security • Cyber-Physical Systems • Distributed Systems • Smart Grid Security and Big Data Challenges • Formal Methods • Highly Assured and Reliable Communication | <ul style="list-style-type: none"> • Cyber-Physical Security • Distributed/Operating Systems • Computer Networks • Algorithmic Analysis and Design • Theory of Computation • Computer Architecture |
|--|--|

PATENT

- P1. Brett Johnson, **Thoshitha Gamage**, David Bakken, “Rate Based Failure Detection” U.S. Patent #9,857,825, <https://www.osti.gov/servlets/purl/1415443>.

BOOK CHAPTERS

- B1. Bruce McMillin, Ravi Akella, Gerry Howser, **Thoshitha Gamage**, and Tom Roth, “Security in the Cyber-Physical Electric Power Infrastructure” Book Chapter in Principles of Cyber-Physical Systems: An Interdisciplinary Approach, Editors: Sajal Das and Sandip Roy Cambridge University Press (2020), ISBN-13: 978-1107066618 (Chap. 10)
- B2. **Thoshitha Gamage**, Dave Anderson, David Bakken, Ken Birman, Anjan Bose, Carl Hauser, Ketan Maheshwari, and Robert van Renesse, “Mission-Critical Cloud Computing for Critical Infrastructures”, book chapter in Smart Grids: Clouds, Communications, Open Source, and Automation, Editors: David Bakken and Kris Iniewski, CRC Press (2014)
<http://www.crcnetbase.com/doi/book/10.1201/b16908> (Chap. 1)
- B3. David Bakken, Pranavamoorthy Balasubramanian, **Thoshitha Gamage**, Santiago Grijalva, Kory W. Hedman, Yilu Lui, Vaithianathan Venkatasubramanian, and Hao Zhu, “Power Application Possibilities with Mis-

sion *Critical Cloud Computing*”, a book chapter in *Smart Grids: Clouds, Communications, Open Source, and Automation*, Editors: David Bakken and Kris Iniewski, CRC Press (2014)
<http://www.crcnetbase.com/doi/book/10.1201/b16908> (Chap. 2)

JOURNALS

- J1. **Thoshitha Gamage**, Yaxi Liu, Tu A. Nguyen, Xin Qiu, Bruce M. McMillin, and Mariesa L. Crow, “A Novel Flow Invariants-Based Approach to Microgrid Management”, in *IEEE Transactions on Smart Grid* (2015)
<http://ieeexplore.ieee.org/abstract/document/6987344/>
- J2. **Thoshitha Gamage**, Thomas Roth, Bruce McMillin, and Mariesa Crow “Mitigating Event Confidentiality Violations in Smart Grids: An Information Flow Security-based Approach”, in *IEEE Transactions on Smart Grid* (2013)
<http://ieeexplore.ieee.org/document/6482697/>
- J3. Yujue Wang, **Thoshitha Gamage**, and Carl Hauser, “Security Implications of Transport Layer Protocols in Power Grid Synchronphasor Data Communication”, in *IEEE Transactions on Smart Grid special issue on Cyber Physical Systems and Security for Smart Grid* (2016)
<http://ieeexplore.ieee.org/document/7346493/>
- J4. Ren Liu, Cemman Vellaithurai, Saugata Biswas, Anurag K. Srivastava, and **Thoshitha Gamage**, “Analyzing the Cyber-Physical Impact of Cyber Events on the Power Grid”, in *IEEE Transactions on Smart Grid special issue on Cyber Physical Systems and Security for Smart Grid* (2015)
<http://ieeexplore.ieee.org/document/7116592/>
- J5. **Thoshitha Gamage**, Jayantha Herath, Susantha Herath, Arjun Roy, and Vidarshana Bandara, “Performance Comparison of Recent Random Number Generators”, in *Journal of Global Information Technology* (2008)

PEER REVIEWED CONFERENCES

- C1. Dale Auten and **Thoshitha Gamage**, “Impact of Resource-Constrained Networks on the Performance of NIST Round-3 PQC Candidates”, in 45th IEEE Annual Computer Software and Applications Conference (COMPSAC ‘21), Madrid, Spain (2021)
<https://ieeexplore.ieee.org/document/9529671>
- C2. **Thoshitha Gamage** and Tim York, “Reflections of a Hardware-Software Co-Instructional Approach to Cybersecurity Education”, in proceedings of the 52nd ACM Technical Symposium on Computer Science Education (SIGCSE ‘21), virtual
<https://dl.acm.org/doi/10.1145/3408877.3432473>
- C3. Jacob Hendricks, Brandon Burke, and **Thoshitha Gamage**, “Polysizemic Encryption: Towards a Variable-Length Output Symmetric-Key Cryptosystem”, in 43rd IEEE Annual Computer Software and Applications Conference (COMPSAC ‘19), Milwaukee, WI (2019)
<https://ieeexplore.ieee.org/abstract/document/8754346>
- C4. Sai Vallapu and **Thoshitha Gamage**, “Towards Detecting Sex Offenders in Social Networks”, in 41st IEEE Annual Computer Software and Applications Conference (COMPSAC ‘17), Turino, Italy (2017)
<https://ieeexplore.ieee.org/document/8029903>
- C5. **Thoshitha Gamage**, Gregary Zweigle, Mani Venkathasubramanian, Carl Hauser, and Dave Bakken, “Towards Grid Resilience: A Proposal for a Progressive Control Strategy”, in *IEEE Annual Green Technology Conference (GreenTech 2015)*, New Orleans, LA (2015) <https://ieeexplore.ieee.org/document/7150230>
- C6. Yujue Wang, **Thoshitha Gamage**, and Carl Hauser, “A Trust Modeling Framework with Application to Critical

- Infrastructures*”, in Cyber Security Symposium: Public-Private Partnerships (CyberSec 2014), Moscow, ID (2014) http://tcipg.org/sites/default/files/papers/2014_Q1_GSST1.pdf
- C7. Kelsey Cairns, **Thoshitha Gamage**, and Carl Hauser, “Efficient Target Key Subset Retrieval in Fractal Hash Sequences”, in 20th ACM Conference on Computer and Communications Security (CCS 2013), Berlin, Germany (2013) <http://dl.acm.org/citation.cfm?id=2516739>
- C8. Kelsey Cairns, Carl Hauser, and **Thoshitha Gamage**, “Flexible Data Authentication Evaluated for the Smart Grid”, in IEEE International Conference on Smart Grid (IEEE SmartGridComm), Vancouver, Canada, (2013) <http://ieeexplore.ieee.org/document/6688006>
- C9. **Thoshitha Gamage**, Thomas Roth, and Bruce McMillin, “Confidentiality Preserving Security Properties for Cyber-Physical Systems”, in 35th IEEE Annual Computer Software and Applications Conference (COMPSAC ‘11), Munich, Germany (2011) <http://ieeexplore.ieee.org/document/6032322>
- C10. **Thoshitha Gamage**, Ravi Akella, Thomas Roth, and Bruce McMillin, “Information Flow Security in Cyber-Physical Systems”², in 7th Annual Cyber Security and Information Intelligence Research Workshop (CSI-IRW7), Oak Ridge, TN (2011) <http://dl.acm.org/citation.cfm?id=2179356>
- C11. Tu A. Nguyen, Xin Qiu, **Thoshitha Gamage**, Mariesa Crow, Bruce McMillin, and A. Elmore, “Microgrid Application with Computer Models and Power Management Integrated Using PSCAD/ EMTDC”, in North American Power Symposium (NAPS ‘11), Boston, MA (2011) <http://ieeexplore.ieee.org/document/6024882>
- C12. **Thoshitha Gamage**, Bruce McMillin, and Thomas Roth, “Enforcing Information Flow Security Properties in Cyber-Physical Systems: A Generalized Framework Based on Compensation”, in 6th IEEE International Workshop on Security, Trust, and Privacy for Software Applications (STPSA ‘10), Seoul, Korea (2010) <http://ieeexplore.ieee.org/document/5615775>
- C13. **Thoshitha Gamage**, and Bruce McMillin, “EM Enforcing Information Flow Properties using Compensating Events”, in 42nd Hawaii International Conference on System Sciences (HICSS ‘09), Big Island, HI (2009) <http://ieeexplore.ieee.org/document/4755796>
- C14. **Thoshitha Gamage** and Bruce McMillin “Observing for Changes: Nondeducibility Based Analysis of Cyber-Physical Systems”, in Proceedings of the 3rd International Federation for Information Processing Conference (IFIP WG 11.10), Hanover, NH (2009) <https://pdfs.semanticscholar.org/941d/e63bbb79c46ed78c855d4b8674ec6d9d792a.pdf>
- C15. **Thoshitha Gamage**, Ahmed Ramadani, and Donald O. Hamnes, “Performance Evaluation of Java RMI in Parallel and Distributed Discrete Event Simulation”, in proceedings of the 41st Annual Conference of Midwest Instruction and Computing Symposium (MICS ‘08), La Crosse, WI (2008) <http://www.cs.uwlax.edu/mics2008/MICS2008Proceedings.pdf>
- C16. Arjun Roy, **Thoshitha Gamage**, and Jayantha Herath, “Recent Advances in Pseudo Random Number Generation”, in proceedings of the 40th Annual Conference of Midwest Instruction and Computing Symposium (MICS ‘07), Grand Forks, ND (2007) http://www.micsymposium.org/mics_2007/proceedings.pdf

TECH REPORTS AND PRESENTATIONS

- T1. **Thoshitha Gamage** “Network Security from a Software Development perspective”, an invited talk at Dialog Axiata PLC, 12/09/2021
- T2. **Thoshitha Gamage** and Tim York “An Interdisciplinary Hands-on Approach to CyberSecurity”, Final report and Presentation at Continuous Improvement Conference, SIUE (2018)

²₃rd best paper award

- T3. **Thoshitha Gamage** “*Improving Advanced Power Grid Resilience through Progressive Control Strategies*”, SIUE SoE Seminar Series, SIUE (2017)
- T4. **Thoshitha Gamage**, “*Security Issues and Tradeoffs for Closed-Loop WAN Applications*”, invited panel presentation in IEEE International Conference on Smart Grid (IEEE SmartGridComm), Vancouver, Canada, (2013) <http://goo.gl/zTVGpG>
- T5. Brett Johnson, **Thoshitha Gamage**, and Dave Bakken, “*Rate Based Failure Detection for Mission-Critical Data Delivery*”, in 2013 Annual TCIPG Industry Workshop, Champaign, IL (2013) <http://goo.gl/B3dYcV>
- T6. Kelsey Cairns, Carl Hauser, and **Thoshitha Gamage**, “*Flexible Data Authentication Evaluated for the Smart Grid*”, in 2013 Annual TCIPG Industry Workshop, Champaign, IL (2013) <http://goo.gl/RgFiM5>
- T7. Yujue Wang, **Thoshitha Gamage**, and Carl Hauser, “*Resilience of State Estimation using Hybrid SCADA and PMU Data*”, in 2013 Annual TCIPG Industry Workshop, Champaign, IL (2013) <http://goo.gl/ZsLpyv>
- T8. Brett Johnson, **Thoshitha Gamage**, and Dave Bakken, “*Rate Based Failure Detection for Critical-Infrastructure Sensor Networks*”, in 2012 Annual TCIPG Industry Workshop, Champaign, IL (2012) <http://goo.gl/9NzX9i>
- T9. Kelsey Cairns, Carl Hauser, and **Thoshitha Gamage**, “*Fractal Hash Traversal with Directed Key Targeting*”, in 2012 Annual TCIPG Industry Workshop, Champaign, IL (2012) <http://goo.gl/kWoUIo>
- T10. Yujue Wang, Carl Hauser, and **Thoshitha Gamage**, “*Evidence-based Trust for Critical Infrastructure Decision Making*”, in 2012 Annual TCIPG Industry Workshop, Champaign, IL (2012) <http://goo.gl/z15x4b>
- T11. **Thoshitha Gamage**, “*Distributed Device Management for Smart Micro-grids*”, Final report on Smart Grid Capabilities for Forward Operating Base Camps, Missouri S&T (2011)
- T12. **Thoshitha Gamage**, Bruce McMillin, and Thomas Roth “*Enforcing Information Flow Security Properties in Cyber-Physical Systems: A Generalized Framework based on Compensation*”, Technical Report, FILPOWER Research Repository, Missouri S&T (2011)
- T13. Thoshitha Gamage, and Bruce McMillin, “*Preserving Event Confidentiality using Compensating Events in Cyber-Physical Systems*”, in Annual Graduate Research Showcase (CGS-GRS ‘10), Rolla, MO (2010)

SYNERGISTIC ACTIVITIES

- **ABET Program Evaluator** 2022 – present
- **NSF Review Panelist** 2016, 2013
- **Graduate Faculty SIUE** 2015 – present
- **Session Chair IEEE GreenTech** 2015
- **Program Committee Member IEEE COMPSAC** 2022, 2019, 2018, 2017, 2016, 2015
- **Program Committee Member IEEE QRS** 2022 – 2019
- **Reviewer IEEE Transactions Sustainable Energy** 2018
- **Reviewer Transactions on Network Science and Engineering** 2018
- **Program Committee Member IEEE COMPSAC EATA Symposium** 2019, 2018, 2017
- **Program Committee Member IEEE COMPSAC NCIW Symposium** 2022, 2019, 2017
- **Program Committee Member IEEE COMPSAC TAIN Symposium** 2016
- **Program Committee Member IEEE COMPSAC NATA Symposium** 2016
- **Program Committee Member 13th International BWCCA Conference** 2018

- **Contributing Reviewer** ACM-IEEE Cybersecurity Curricula 2017
- **Review Committee Chair** Internal Program Review (SIUE Undergraduate Music) 2017
- **Review Committee Member** Internal Program Review (SIUE Undergraduate Math) 2016
- **Reviewer** ACM Transactions on Privacy and Security 2022
- **Reviewer** IEEE Access 2022
- **Reviewer** IEEE Transactions on Smart Grid 2019, 2018, 2016, 2015, 2014
- **Reviewer** Elsevier Journal on Computer Communication (COMCOM) 2017
- **Reviewer** IEEE Transactions on Services Computing 2016
- **Reviewer** IEEE Journal on Emerging and Selected Topics in Circuits and Systems 2016
- **Reviewer** Elsevier Journal Sustainable Computing, Informatics and Systems 2018, 2017, 2016
- **Reviewer** Elsevier Journal of Systems and Software 2015
- **Reviewer** IEEE GreenTech 2016
- **Member** Computer Science Undergraduate Curriculum Committee SIUE 2014 - 2017
- **Member** Computer Science Graduate Curriculum Committee SIUE 2019 –2014
- **Program Committee Member** **IEEE CSS** 2014
- **Publicity Chair** IEEE COMPSAC 2014
- **Reviewer** International Transactions on Electrical Energy Systems, IEEE COMPSAC, IEEE SmartGrid-Comm, IEEE CCS, IEEE Trans. on Smart Grid 2014
- **Social Media Chair** IEEE SmartGridComm 2013
- **Reviewer** IEEE Trans. Sustainable Energy (TSE), IEEE Journal on Selected Areas in Communications (JSAC) 2013
- **Organizing Committee Member** **TCIPG Summer School (tcipg.org)** 2013
- **Reviewer** IEEE JSAC, IEEE SmartGridComm, IEEE SERE, ICCPS, 2012
- **Reviewer** IEEE HASE 2011
- **Registration Chair** 35th IEEE COMPSAC 2011
- **Student Committee Member** CS Department Graduate Policies and Procedures Committee, Missouri S&T 2009-2011
- **Founding Student Chair** IEEE Computer Society Student Branch, Missouri S&T 2010
- **Organizing Committee Member** IANCSS Conference St. Cloud State University 2007
- **President** Sri Lanka Association (Midwest) 2011
 - *A non-profit charity based in St. Louis, MO* slamidwestusa.org
- **Public Relations Chair** Missouri S&T Sri Lanka Student Association [*student organization*] 2009
 - *A student organization in Missouri S&T*
- **Vice-President** Ayubowan Sri Lanka Association (ASLO) [*student organization*] 2007
 - *A student organization in St. Cloud State University* studentorg.stcloudstate.edu/aslo

MEMBERSHIPS

- **Member** ACM
- **Affiliated Faculty Member** Washington State University Energy Systems Innovation Center (ESIC) (2011-2014)
- **Sun Certified Java Programmer** Java 1.4 (2005)

GRANT ACTIVITIES

- G1. “*Research Equipment and Tools Funding Proposal*” in response to SIUE Graduate School Research Equipment and Tools Program 2017 as **PI**. [[Awarded \\$11,892](#)] 2017

- G2. “NSF: *CyberSec Minds: Developing Cybersecurity Mindsets in Undergraduates through a Core Computer Science Curriculum*” in response to NSF Solicitation NSF 15-584 CyberCorps(R) Scholarship for Service (SFS) Defending America’s Cyberspace as **PI**. [*Declined with Low Competitive rating*] 2016
- G3. “*Sprinkled Security: Noninvasive Cybersecurity Interventions*” in response to EUE Call for Proposals FY2017 as **PI**. [*Awarded \$13,580*] 2016
- G4. “*Research Equipment and Tools Funding Proposal*” in response to SIUE Graduate School Research Equipment and Tools Program 2016 as **PI**. [*Awarded \$38,171*] 2016
- G5. “*An Interdisciplinary Hands-on Approach to Cybersecurity Education*” in response to SIUE EUE Call for Proposals FY2016 as **PI**. [*Awarded \$11,836*] 2015
- G6. “*Towards Innovations in Cybersecurity Education: Cybersecurity in Disguise of a Core Computer Science Curriculum*” in response to SIUE STEM Faculty Research Fellowship FY 16 as **PI**. [*Awarded \$5,000*] 2015
- G7. Travel grant from SIUE graduate school. [*Awarded \$900*] 2019
- G8. (2017) Travel grant from the College of Charleston to attend the 2017 Cyberpaths Workshop. [*Awarded \$1,500*] 2015
- G9. Travel grant from SIUE graduate school. [*Awarded \$900*] 2015
- G10. “*Self-Healing Control Architectures for Electric Power Grid*” in response to WSU ESI Center Seed Funding Program FY 13 as a **Co-PI**. [*Awarded \$40,000*] 2013
- G11. “NSF:RUI: *CC*Compute: SIUE Campus Cyber Alliance: An Integrated Campus-wide Cyberinfrastructure Supporting Domain Science and HPC Workforce*” in response to NSF Solicitation NSF 14-579 Facilitating Research at Primarily Undergraduate Institutions: Research in Undergraduate Institutions (RUI) and Research Opportunity Awards (ROA) as a **Co-PI**. [*Declined*] 2015
- G12. “NSF: *CRISP Type 1: Characterization and Engineering of Resilient Interdependent Critical Infrastructures*” in response to NSF Solicitation NSF 15-531 Critical Resilient Interdependent Infrastructure Systems and Processes (CRISP) as a **Co-PI**. [*Declined*] 2015
- G13. “NSF: *EAGER: Improved Cyber-security for Youth: Linking Registered Sex Offenders’ Online Presence to their National Sex Offender Registry (NSOR) Profile*” in response to NSF Dear Colleague Letter NSF 15-005 SaTC EAGERS Enabling New Collaborations as **Co-Pi**. [*Declined*] 2015
- G14. “*Cybersecurity Education in Disguise of a Core Computer Science Curriculum – An Attempt to Meet a Critical National Need*” in response to SIUE IERC Faculty Research Fellowship as **PI** [*Declined*] 2015
- G15. “*1st CReST Faculty Development Workshop: Security Integration in Curriculum*” in response to Call for Participation [*Declined*] 2015
- G16. “*Early Exploration on the Application of Topological Combinatorics for Cyber-Physical Security Analysis*” in response to SIUE STEP CFP FY 2016 as **PI** [*Declined*] 2014

AWARDS

- A1. **Outstanding Teacher** in Computer Science Department 2021, 2018, 2016
- A2. **Invited Participant and Travel Grant** NSF/DIMCS Workshop for Aspiring PIs in Secure and Trustworthy Cyberspace (SaTC), Raleigh, NC 2012
- A3. Academic Achievement Award (*CS Department, Missouri S&T*) ‘09, ‘10, ‘11

OUTSIDE ACADEMIA

- Kukkiwon Certified **2nd Dan Black Belt** in Taekwondo
- **Gold Medalist** in Traditional Poomsae, U.S. Open International Taekwondo Hanmadang, Denver, CO
<https://app.tournamenttiger.com/Tournaments/Placements/ByTournament/18> 2017
- **Silver Medalist** in Individual Jumping High Kick, U.S. Open International Taekwondo Hanmadang, Denver, CO 2017
- **Gold Medalist** in Sparring, 30th Annual World TaeKwonDo Championship, Louisville, KY 2016
- **Silver Medalist** in Traditional Forms, 30th Annual World TaeKwonDo Championship, Louisville, KY 2016

REFERENCES

.....upon request.....