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CFIC@SHSU

Sam Houston State University Cyber Forensics Intelligence Center Newsletter 0,11,01010 10 01 001 001 100 7770 x

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HIGHLIGHTS

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- The CFIC welcomes Dr. Bing Zhou as the new Chair of the Computer Science Department.
- Mr. Daniel Miller, Dr. Amar Rasheed, Mr. Marc Crudginton, and Mr. Andy Bennet are our DFI Speakers for October.
- The Digital Forensics Intelligence (DFI) Research group presentation schedule is available on the CFIC web site.
- The CFIC is recruiting for SHSU's National Collegiate Cyber Defense Competition (CCDC) team this year.



DIRECTOR'S MESSAGE

Cybersecurity is increasingly critical in today's globally networked society. As interest continues to escalate, there is a need to understand the overall threat landscape and its evolution. While technology plays a critical role, cybersecurity is not solely a technical issue; it involves humans, legislation, policies, standards, and procedures, making it a cross-display topic. The very nature of the environment creates opportunities for collaborative research as well as the development and implementation of creative solutions.

The research in the CFIC and the Department of Computer science strives to address these issues in collaboration with industrial partners. The speakers in the Digital Forensics Intelligence research group come from a variety of backgrounds and perspectives. If you would like to participate in future research talks, please reach out to the CFIC. Students interested in being a member of SHSU's National Collegiate Cyber Defense Competition (CCDC) team this year are urged to reach out to the CFIC and let us know. Equally, we welcome industry participation and training advice. If you would like to share your expertise with SHSU's CCDC team, please contact the CFIC.

CONTINUOUS IMPROVEMENT

The CFIC and the Department of Computer Science (DCS) both promote a concept that is prevalent in software engineering agile development, which is a continuous improvement. DCS is updating its Program Educational Objectives (PEOs) based on feedback from the CFIC and DCS Advisory Board.



DCS wants to hear from departmental graduates who are working in computer science-related disciplines to acquire a better understanding of how SHSU's computer science degree impacts your career. Also, DCS encourages employers of SHSU DCS Computer Science graduates to provide feedback on their overall performance in the workplace.

Program Educational Objectives

- Our graduates should be inclined to pursue postgraduate education and/or acquire professional certifications.
- Our graduates should be capable of demonstrating a solid foundation in computing science by holding professional positions and advancing their careers, as reflected by their job responsibilities.
- Our graduates should become trusted colleagues respected for their leadership, problem-solving, teamwork, and communication skills
- Our graduates should be active in professional development and acquiring new skills to remain relevant in computer science and related disciplines as dictated by market needs and advancements.

If you are a computer science graduate or an employer, DCS welcomes your feedback through the following survey link to continuously improve educational experiences and industry marketability.

Department of Computer Science Survey

COMPUTER SCIENCE DEPARMTENT CHAIR DR. BING ZHOU



Dr. Zhou received her Ph.D. in Computer Science from the University of Regina, Canada, in 2012 and joined Sam Houston State University the same year. She is currently an Associate Professor at SHSU. Zhou served as a program committee member of the AAAI Conference on Artificial Intelligence and the International Joint Conference on Artificial Intelligence (IJCAI). She also served as a reviewer in many SCI-index journals and other conferences. Her research focuses on cybersecurity, cyber forensics, soft computing, and data mining.

MESSAGE FROM DR. ZHOU

Greetings from SHSU Computer Science

In Fall 2020, I assumed my role as department chair. I am honored to take on this new role and lead the department through our next stage of growth. Every year, the demand for graduates in computer science in academics and industry increases. We begin this academic year with 400+ undergraduate students and 100+ graduate students, all engaged in one of our 3 undergraduate programs and 7 graduate programs, respectively. I am excited to continue and build upon our department's mission of providing the highest quality education possible to our students through excellence in teaching and excellence in research.

The goal of SHSU Computer Science is READ – Research, Education, Advancement, and Diversity. For research, I will advocate and promote research excellence in both core and interdisciplinary areas. For education, I will support theoretical and technological innovations to achieve education quality at scale for our students. For advancement, I will engage with our alumni, partners, and friends to explore broader support for our department's mission. Finally, the pursuit of diversity and inclusion will be a key success metric that allows our department to capitalize on the talents, perspectives, and experiences from various backgrounds.

On behalf of SHSU Computer Science, I want to thank Professor Peter Cooper for his leadership as department chair these past years. His commitment to our success is shown by his adherence to our mission of advancing the profession of computer science and serving the public at all levels. He is a relentless advocate for student success and a strong leader within our profession.

As we begin the academic year of 2020-2021, our faculty has grown to 17 members. The competition for recruiting new computer science faculty is higher than ever. SHSU and the College of Science and Engineering Technology continue to support our growth. We are committed as a department to continue to serve our growing student body at the highest possible level.

DFI October and November Research Lineup

10/05/2020: Daniel Miller

School of Computing Doctoral Candidate; University of South Alabama Forensically Analyzing 3D Printers

10/12/2020: Dr. Rasheed

Sam Houston State University (SHSU) Data Privacy and Authentication for Industrial Control System and IoT

10/19/2020: Marc Crudgington

CISO; SVP Information Security Woodforest National Bank The Role of Forensics In Incident Response

10/26/2020: Andy Bennet

The State of Texas as Deputy Chief Information Security Officer Hot Topics that Students and Researchers Should Know About

11/02/2020: Dr. Todd McDonald

University of South Alabama (USA) Forensics Analysis of Ransomware Families

11/09/2020: Edward Harshany

School of Computing Doctoral Candidate; University of South Alabama Automated Distributed File System Storage State Reconstruction

11/16/2020: Dr. Tim Storer

University of Glasgow

Could we have foreseen that breach? Exploring the application of sociotechnical systems simulation to security systems.

11/22/2020: Thanksgiving Holiday: No meeting

11/30/2020: Dr. Andrew McDonald

Barclays Agile Web Engineering (AWE) Process: Learnings From 20 Years in the Field

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DFI SPEAKER: DANIEL MILLER



Daniel Bradford Miller is a PhD student in the School of Computing at the University of South Alabama. Mr. Miller graduated from the University of South Alabama in 2008 with a Bachelor of Science in Information Technology with a focus on Networking. His doctoral research focuses on Digital Forensics of Additive Manufacturing (AM) systems. He has published work exploring the potential existence of residual data within components of AM systems and presenting an empirical examination of digital artifacts on a commodity 3D printer. In addition to his scholarly work, Mr. Miller is a Management Systems Specialist employed by the University of South Alabama College of Arts and Sciences where he manages technical operations.

Additive Manufacturing (AM) technologies are increasingly being adopted by many industries, including healthcare, aviation, and the military, to address novel domain problems and bring customization into the manufacturing process. The flexibility of AM systems to meet the needs of such disparate industries stems from the close integration of computers with a layering process used to create the items. The computers used in these systems range from embedded systems with limited capacity to general-purpose computing platforms and, consequently, can have faults, be misused, or be subject to attacks by malicious actors. Determining what happened to the device when something goes wrong is the domain of forensics and, with such tight coupling between the computer control and physical process, digital forensics can play a key role in explaining what happened before, during, and after an event of interest. Unfortunately, there are a number of hurdles to forensically analyzing these systems due to the wide range of system architectures in use. This talk will cover some of the background, current research, and future work related to digital forensics of AM systems.

DFI SPEAKER: DR. AMAR RASHEED



Dr. Amar Rasheed is an Assistant professor of Computer Science at Sam Houston State University. He worked previously as a post-Doctoral Fellow in the Information Science and Technology Division of the Applied Research Laboratory (ARL) at Pennsylvania State University. His research interests include sensor modeling and data collection algorithms, efficient data collection schemes for wireless sensor networks, energy-efficient sensor data gathering mechanisms, secure mobile sensor data communication models design, cybersecurity systems, cybersecurity risk assessment and analysis, secure wireless sensor network, key pre-distribution schemes for randomly distributed sensor network, applied crypto, the development of energy-efficient schemes for power-limited devices, IoT security, Hardware security, and Industrial Control System Security.

DFI SPEAKER: MARC CRUDGINGTON

Marc Crudgington is the Chief Information Security Officer, SVP Information Security for Woodforest National Bank and in the role since joining Woodforest in August 2012. Marc is a veteran of the United States Air Force serving honorably from April 1992 -April 1996; he held a Top-Secret clearance and performed duties in intelligence, computer operations, computer communications, and network communications. Prior to Woodforest, Marc worked for Advantage Sales and Marketing, KPMG, and Silicon Valley technology companies with leadership roles in IT and engineering. Marc has a Master of Business Administration, Technology and Strategy, from the University of California Irvine -Paul Merage School of Business and a Bachelor of Business Management from the University of Phoenix. Marc also attended the FBI CISO Academy in March 2017. He holds a Secret Clearance and PCIP, ISA, CDPSE, CRISC, Security+, Scrum Master, and ITIL certifications; previously, he held a C|CISO, PMP, TOGAF, CISM, and CISA certifications.



Marc serves on the University of Houston CIS Industry Advisory Board, Sam Houston State University Digital and Cyber Forensic Engineering Advisory Board, Lone Star College Cybersecurity and Computer Science Advisory Board, Optiv Customer Advisory Board, InfraGard Houston Chapter Board of Directors, Texas Banker's Association Technology Committee, Community Bankers Association Privacy/Data Security Working Group, and several cyber-security and technology conference advisory boards. Previously Marc was part of the National Infrastructure Protection Plan Working Group and DHS Threat Information Sharing Framework Working Group. Marc is a member of InfraGard and previously served as the Deputy Chief for the Houston Chapter Financial Services CSC. Marc is host of a podcast, The CISO Revelation, has been a contributor and posted several articles, presentations, and white papers on LinkedIn, for the Project Management Institute, and serves as a speaker, panelist, and moderator at several IT and Security conferences. In 2019 Marc was awarded the coveted T.E.N. ISE North America Executive of the Year Financial Services award. In 2019, Marc was nominated and selected as a finalist for the T.E.N. ISE (Information Security Executive) Central Executive of the Year award and was nominated for the ISE Central People's Choice award. In 2018 Marc was nominated for and a finalist for the T.E.N. ISE North America Executive of the Year award and the T.E.N. ISE People's Choice award; in 2016, Marc was nominated for and a finalist for the T.E.N. ISE Central Executive of the Year award and T.E.N. ISE Financial Services Executive of the Year award.

DFII SPEAKER: ANDY BENNET



Andy is a straight-shooting, boot-wearing native Texan who rolls up his sleeves to build business-centric information security solutions. Andy formerly served as the Deputy CISO for the state of Texas and transitioned from public service after 14 years of service to join Apollo Information Systems. Then and now, he helps clients to fully understand their risk exposure and create a strategy to mitigate those risks in alignment with the needs and risk appetite unique to their business. Andy takes it as a personal responsibility to ensure clients are able to securely and confidently conduct their business and serve their customers. He specializes in incident response and has helped countless people work through the worst threats cyberspace has to offer. Andy is a Sam Houston Bearkat to the core with both his bachelor's and masters degrees coming from SHSU. Andy worked and taught at the University from 2008 to 2016 and continues to serve on the advisory board for both the computer science department and the CFIC.

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Partnerships

Internship Program

Organizations partner with the Center to provide on-site internship experiences to students enrolled in the Department of Computer Science at SHSU to assist in workforce development.



Capstone Project

Provides students with the opportunity to interact with industry while simultaneously introducing them to practical research. These projects are conducted in conjunction with industrial partners at no cost to the organization.

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Seminar Presentations

Industrial partners are invited to make presentations during the fall and spring semesters on challenges that they face from cybersecurity, digital forensics, and information assurance perspectives.

CONTACT THE CFIC

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CFIC MISSION

To conduct world-class, leading cyber forensics and security research, provide real-world training solutions, investigate cutting edge cyber forensic investigation resources; promote professional networking; and participate in open data exchanges.

GOALS

To bring together leading industry participants, practitioners, and faculty members from a variety of disciplines to research cyber forensic and digital security topics that are of interest to governmental, commercial and legal communities in order to:

- Deliver innovative, avant-garde, pioneering research expertise in security and forensics that solves real-world problems
- Partner with governmental, commercial, and legal communities to improve workforce education through world-class training programs
- Provide state-of-the-art research facilities, equipment, and training that empowers faculty to pursue substantial research funding
- Deliver to governmental, commercial, and legal communities a collaborative operational and investigative ecosystem for identifying and resolving cyber forensics and security challenges

Please follow us @



Directions

I-45, Huntsville, TX 77340 to Avenue I, Huntsville, TX 77340

1.Depart I-45, Huntsville, TX 77340 2. Turn East onto US-190 [SR-30] for 1.1 miles.

3. Turn Right(South) onto SR-75 [N. Sam Houston Ave] for 0.4 miles.

4. Turn Left(East) onto 16th St. for 0.2 miles. 5. Turn Right(South) onto Avenue I for 0.1

miles. 6. Arrive Avenue I.

The Cyber Forensics Intelligence Center is located in AB1 Room 208