May 2020, VOLUME 2 ISSUE 2

CFIC@SHSU

Sam Houston State University Cyber Forensics Intelligence Center Newsletter



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HIGHLIGHTS

- The CFIC is starting the Digital Forensics Information Intelligence (DFII) Research group this fall. If you are interested in giving a presentation to the group, please contact the CFIC.
- The CFIC is providing internships to doctoral students this summer. We are looking forward to working with postgraduate students and the Department of Computer Science faculty to investigate current research challenges.
- The CFIC is actively promoting the CybeRsecurity EducATion InitiatiVEs (CREATIVE) in Higher Education Environments workshop and the Cyber Operations, Defence, and Forensics Mini-track that are available at HICSS 2021. Submissions for the mini-track are due July 15, 2020.



DIRECTOR'S MESSAGE

As all industries continue to migrate towards an increasingly prominent digital footprint, the need for cybersecurity and cyber forensics research continues to escalate. As cybercrimes continue to increase, it is not a question of 'if' but 'when' and attack will be successful. The CFIC strives to help identify cybersecurity weakness, understand how to investigate evolving technology and environments as well as propose mitigation strategies and solutions. We do this through a range of activities that includes supporting and participating in cybersecurity competitions, running min-tracks that focus on Cyber Operations, Defence and Forensics, holding workshops on CybeRsecurity EducATion InitiatiVEs (CREATIVE) in Higher Education Environments as well as working with undergraduate, graduate, and doctoral researchers to investigate and resolve real-world problems. The CFIC looks forward to assisting you with your cybersecurity and cyber forensics requirements.

CFIC ACTIVITIES



DFII

The Digital Forensics Information Intelligence research group investigates the extraction of digital evidence from all types of digital media so that it will stand up in a court of law. The importance of digital forensics continues to escalate in today's globally connected world. In this digital forensics context, research includes software engineering, reverse engineering, development, testing, and algorithm development to understand how digital devices, the cloud, software, hardware configurations and information compromised, systems can be investigated, and mitigated.

DFII provides a venue for discussing research outcomes and identifying industry focal points. Please join us starting in the Fall of 2020 for lively research discussions on Mondays from 1:00 to 1:50 pm in Room 213 in AB1.

We are exploring Zoom access to the talks. If you are interested in participating via Zoom, please contact the CFIC.



Internships

The CFIC is excited to announce that it is providing doctoral student with internships this summer. Students will be working with the CFIC and the Department of Computer Science faculty to investigate cutting edge research topics.

The CFIC lab is available for doctoral students to use this summer. Research topics we are currently exploring at the CFIC include: Virtual reality content and residual data, mobile device forensics, as well as machine learning and image process in a forensic context to generate data and match to database information, malware detection and problem solving algorithms and much more.

If your company is interested in working with the CFIC and postgraduate students now or in the future, please contact us.

DR. MINGKUI WEI CFIC RESEARCHER

Dr. Mingkui Wei is a Assistant Professor in the Department of Computer Science here at Sam Houston State University since September 2016. He is also a scholar endorsed by the Cyber Forensics Intelligence Center. His current research interests lie in Internet and Web Application security, and leveraging advanced computer science technologies to help law enforcement agencies to achieve more efficient crime scene investigations.



Dr. Wei has conducted researches, funded by the Pilot Studies for Future Funding Program of the Office of Research and Sponsored Programs at SHSU, that identified serious security vulnerabilities on tens of thousands of websites world wide. The vulnerability he identified has been recognized and endorsed by the CERT Coordination Center hosted by Carnegie Mellon University.

He is currently preparing multiple papers toward the top tier international cybersecurity conferences. For the later, Dr. Wei is collaborating with a professor in the Forensic Science department of SHSU, as well as the R&D department at Houston Forensic Science Center, and proposing to develop a smart photography application that can facilitate latent print image collection for crime scene investigators. His preliminary work has been supported by the Faculty And Student Team (FAST) award from the Enhancing Undergraduate Research Experiences and Creative Activities (EURECA) center, SHSU, where he lead three undergraduates conducted related research work.

Their work has been accepted to and presented at the annual meeting of American Academy of Forensic Science, one of the oldest and most prestigious Forensic Science community in North America.

CYBERSECURITY COMPETITION MAY, 2020

function_start() var today = . **var** h = today.getHours(Var m = today.getMinutes(**var s =** today.getSeconds m = correctTime(m); **s = corre**ctTime(s); document.getElementById(//calling the function var t = setTimeout(star //adding the zero if need function correctTime(i)

The CFIC is hosting a virtual, internal undergraduate student CyberSecurity competition. Student teams are presenting their CyberSecurity research projects, via YouTube video submissions, for this competition. The advisory board is currently reviewing the submissions.

The award is for the most industry-relevant and innovative project. The CFIC advisory board consists of industry specialists in cybersecurity and software engineering. The community at large is welcome to vote on the projects presented on the CFIC's YouTube channel.The general criteria for the ranking that the CFIC judges may use include:

- Overall clarity and presentation
- Originality, creativity, and significance
- Accuracy of data analysis, conclusions, and impact discussion

Please visit the CFIC YouTube channel or the Events page on the CFIC Web site and vote for your favorite videos!

https://df.shsu.edu/home/events.html

HICCS WORKSHOP



CybeRsecurity EducATion InitiatiVEs (CREATIVE) in Higher Education Environments

CFIC Directior Dr. Brad Glisson and Computer Science faculty member Dr. Narasimha Shashidhar are two of the four organizers of the, CybeRsecurity EducATion InitiatiVEs (CREATIVE) Higher Education Environments Workshop at HICCS 54.

CREATIVE 2021's main objective of this workshop is to bring together academic scientists, researchers and research scholars and industry leaders to exchange and share their experiences and research results about all aspects of Cybersecurity programs and in higher education insitiutions acorss the United States. The deliverable from the workshop is a report that outlines the challenges and opportunities identified in the workshop.

- We are identifying challenges in running and creating, maintaining cybersecurity programs enrollment, technological advancements, and changing attack threats.
- We are identifying opportunities related to online cybersecurity benefits in relation to the pros and cons of cybersecurity programs.
- We are investigating the idea of standardizing curriculum and cybersecurity programs and the benefits of accreditations.
- Connect industry, academia, and government entities interested in identifying and pursuing collaborative funding opportunities in cybersecurity.

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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 Sicence 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.



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



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