

16th International Conference on Cyber Warfare and Security

ICCWS 2021

25-26 February 2021

Supported by Tennessee Tech University and Oak Ridge National Laboratory, USA

Times listed in EST (Eastern US time) and GMT (UK time)

EST	GMT	Thursday 25 February 2021		Zoom Login Details - Password to all Rooms: ICCWS21
07:00	12:00	Zoom Room 1 Opens		Room 1 – Stream A https://us02web.zoom.us/j/84194257306 Meeting ID: 841 9425 7306 (The conference will start in this room)
07:45	12:45	Room 1: Welcome: Dr. Juan Lopez Jr. and Dr. Kalyan Perumalla, Oak Ridge National Laboratory, USA		Room 2 - Stream B https://us02web.zoom.us/j/88916517170 Meeting ID: 889 1651 7170
08:00	13:00	Keynote Presentation: Diane M. Janosek, National Cryptologic School, NSA, USA "Cyber Partnerships for the Future"		Room 3- Stream C https://zoom.us/j/93080974923 Meeting ID: 930 8097 4923
08:45	13:45	Conference splits into streams		
		Room 1 Stream A: Remote Control and Virtual Hate Chair: Keith Scott	Room 2 Stream B: Mini Track on Cybercrime, Cyber Criminology, & Criminal Investigations Chairs: Greg Laidlaw	Room 3 Stream C: Industrial Control Systems Chairs: Michael Hotchkiss
09:00	14:00	Small Drones' Swarms and Military Paradigm Change Martti Lehto, University of Jyväskylä, Finland and Bill Hutchinson, Edith Cowan University, Australia	A Methodology for Smart TV Forensics Chuck Easttom, Georgetown University, USA	Smart Semi-Supervised Accumulation of Large Repositories for Industrial Control Systems Device Information Kimia Ameri, Hamid Sharif, University of Nebraska-Lincoln, USA, Juan Lopez Jr., and Kalyan Perumalla, Oak Ridge National Laboratory, USA
09:20	14:20	Companion Assisted Software based Remote Attestation in SCADA Networks William Johnson, Sheikh Ghafoor, Tennessee Tech University and Stacy Prowell, Oak Ridge National Lab, USA	Game! Crime? - The Shadow Economy Around Digital Games as a Playground for Cybercrime. Alexander Pfeiffer, Massachusetts Institute of Technology, USA, Thomas-Gabriel Rüdiger, Cyber Criminologist, Germany, Stephen Bezzina, Ministry of Education, Malta, Simone Kriglstein, University of Vienna and Thomas Wernbacher, Danube-University Krems, Austria	Ontology Modeling of Industrial Control System Ethical Hacking Thomas Heverin, Ansh Chandnani, Catherine Lopez and Nirav Brahmhatt, Drexel University, USA
09:40	14:40	Review of National and International Cybersecurity Exercises Conducted in 2019 Ivona Brajdić, Ivan Kovačević and Stjepan Groš University of Zagreb, Croatia	Use-Case on Distributed Ledger Technology: Antifraud within the Department of Defense Dorothy Potter and Adrienne Ferguson, National Defense University, USA	Establishing real-time security for Levels 1 and 0 in SCADA networks Mark Baggett, Mission Secure, USA (Presentation Only)
10:00	15:00	Basic Elements of Cyber Security for Automated Remote Piloting Fairway System Jouni Pöyhönen, Tiina Kovanen and Martti Lehto, University of Jyväskylä, Finland	Mathematically Modeling Victim Selection in Cyber Crimes Chuck Easttom, Georgetown University, USA	Lost Packet Warehousing Service Ivan Burke, Heloise Pieterse, Michael Motlhabi and Rofhiwa Netshiya, CSIR, South Africa (Non-Academic)
10:20	15:20	Resilience Analysis of Real-Time Automation Controllers (RTAC) under Cyber Stress Juan Lopez, Joel Asiamah, Raymond Borges-Hink, Oak Ridge National Laboratory, USA and Sina Sontowski, Tennessee Tech University, USA (presentation only)	What Role can Blockchain-Based Digital Identities Play to Counteract (Cyber)Crime in Relation to Assessment Results and Credentials in the Educational Sector? A Glimpse Into the Future Alexander Pfeiffer, Massachusetts Institute of Technology, USA, Vince Vella, Alexiei Dingli, University of Malta, Stephen Bezzina, Ministry of Education, Malta, Simone Kriglstein, University of Vienna, Faculty of Computer Science and Thomas Wernbacher, Danube-University Krems, Austria	Competing interests of Cyberintelligence and Cyberdefence Activities in Neural Countries Marcel Stolz, University of Oxford, UK
10:40	15:40	White Supremacy, Marketing Virtual Hate, and Information Warfare: An Anticipatory Ethical Analysis Richard Wilson, Towson University, USA (presentation only)	Methodology for Modelling Financially Motivated Cyber Crime Tiia Somer, TALTECH, Tallinn, Estonia	Analysing the Cyberattacks Sponsored by State-Actors Under the Contemporary Global Political and Legal Frameworks Ayman Mottaleb and Mustafa Cannan Naval Postgraduate School, USA
11:00	16:00	Break		Break

		Friday 26 February 2021		
07:00	12:00	Zoom Room 1 Opens		
07:45	12:45	Room 1 Opening Messages - Dr. Ambareen Siraj, Tennessee Tech University, USA		
08:00	13:00	Keynote Presentation: Dr Deborah Frincke, National Security Sciences at Oak Ridge National Laboratory, USA "What's Science Got To Do With it?"		
08:45	13:45	Introduction to ICCWS 2022		
08:55	13:55	Conference splits into streams		
		Room 1 Stream A: Mini Track on Interdisciplinary Research Chair: Char Sample	Room 2 Stream B: Mini Track on Cybercrime, Cyber Criminology, & Criminal Investigations Chairs: Greg Laidlaw	Room 3 Stream C: Encryption and Feedback Loops Chair: Christoph Lipps
09:00	14:00	Contemplating Blame in Cyber Security Karen Renaud , Abertay University, Scotland, Alfred Musarurwa , Nedbank Zimbabwe and Verena Zimmermann , TU Darmstadt, Germany	SecCAN: A Practical Secure Control Area Network for Automobiles Mohammad Arman Ullah , Sheikh Ghafoor , Mike Rogers , Tennessee Technological University, USA and Stacy Prowell , Oak Ridge National Laboratory, USA	Enabling NATO Cyberspace Operations by Building Comprehensive Cyberspace Situational Awareness Alberto Domingo and Manisha Parmar , NATO Supreme Allied Commander Transformation, Norfolk, USA, Vincente Pastor , Command Operations, MONS, Belgium and Scott Foote , Phenomenati, Boston, USA
09:20	14:20	Software Fingerprinting in LLVM William Mahoney , Gregory Hoff , George Grispos , University of Nebraska at Omaha and J. Todd McDonald , University of South Alabama, USA	How not to Drown in the Malware Ocean? Inna Vasilyeva , White Ops Inc., USA (Presentation only)	Dynamic Temporal Encryption: A Novel Scheme for Maintaining Secure Encryption Keys Ryan Gabrys , Luis Martinez , Mike Tall , and Sunny Fugate , Naval Information Warfare Center, USA
09:40	14:40	Empirical Study: Privacy and Security Analysis Companion Robot System Development Benjamin Yankson , SUNY - Univeristy at Albany, USA	Down the Rabbit Hole: a Tour into the Dark Web Micki Boland , Check Point Software Technologies, USA (Presentation only)	A Cyber Security Imperatives on an Electronic Voting System in South Africa in 2024 and Beyond Mmalerato Masombuka , Bruce Watson , Stellenbosch University and Petrus Duvenage , University of Johannesburg, South Africa
10:00	15:00	Enhancing Security for Financial Data Supply Chains using Encryption and Other Technologies Nida Kazi , Johns Hopkins University, USA	Local Databases or Cloud Computing services: Cybersecurity issues at the NUST, Zimbabwe Guidance Mthwazi , University of Cape Town, South Africa	Cyber-Physical Warfare & Outer Space Jacob Oakley , Owens Crossroads, USA (Presentation Only)
10:20	15:20	A Control-Theory-Informed Approach to Detecting Malicious Tampering in Additive Layer Manufacturing Processes Joel Dawson , Srikanth Yoginath , Michael Iannacone , Varisara Tansakul , Rob Jordan , Ali Passian , Joel Asiamah , Milton Nance Ericson and Gavin Long and , Oak Ridge National Laboratory, USA	KKK, Narratives, and Racial Hate as Information Warfare: An Anticipatory Ethical Analysis Richard Wilson , Towson University, USA (Presentation Only)	Platform Neutrality: A Solution for the Social Media War? Marcel Stolz , University of Oxford, UK
10:40	15:40	Ivan the Terrible as Pivotal Figure in the Ideology of Information Warfare Michael Hotchkiss , Independent Researcher, USA	Biocybersecurity: A Converging Threat as an Auxiliary to War Lucas Potter , Xavier-Lewis Palmer and Orlando Ayala , Old Dominion University, USA	How to Dance your Passwords: A Biometric MFA-scheme for Identification and Authentication of Individuals in IIoT Environments Christoph Lipps , Jan Herbst and Hans Deiter Schotten German Research Center for Artificial Intelligence, Kaiserslautern, Germany
11:00	16:00	<i>Break</i>		

EST	GMT	Room 1 Stream A: Applied Cyber Issues Chair: Dorothy Potter	Room 2 Stream B: Information Warfare Chair: Virginia Greiman	Room 3 Stream C: Posters Chair: Denis Ulybyshev
12:00	17:00	Paper-tapping to Exfiltrate Data Using Laser Printers Eric Filiol , Pierre-Emmanuel Rabillard , Florian Le Scanf , Pierre Gautier and Paul Quinonero , ENSIBS, Cybersecurity Department, France	Ha Ha Only Serious: Irony in Information Warfare and the Comedy-Cloaked Extremism Keith Scott , De Montfort University, Leicester, UK	5 minute Work in Progress Presentations with time for discussion and feedback Smart Cities and Cyber Security: Ethical and Anticipated Ethical Concerns Richard L. Wilson , Towson University, USA Using AI/Machine Learning for Reconnaissance Activities during Network Penetration Testing George Stone , Doug Talbert and William Eberle , Tennessee Tech, USA (WIP) Zynq System-on-Chip DMA Messaging for Processor Monitoring Daniel Koranek , Scott Graham and Douglas Hodson , Air Force Institute of Technology, USA (WIP) A Predictive Model for Cyber Attacks Verging on War Anton Dahbura , Johns Hopkins University, USA Development Time of Zero-Day Exploits to Support Cyber Operations Alan Shaffer , Joseph Berrios and Gurminder Singh , Naval Postgraduate School, USA Reflections on Dangers of Neurocapitalism in Light of Biocybersecurity Lucas Potter , Xavier-Lewis Palmer and Orlando Ayala , Old Dominion University, USA
12:20	17:20	WebCARTT: The Web-Based Cyber Automated Red Team Tool Joseph Berrios , Ian Shaffer and Gurminder Singh , Naval Postgraduate School, Monterey, USA	Nation-State Perspectives on Information Operations and the Impact on Relative Advantage Brenna Cole and George Noel , Air Force Institute of Technology, USA	
12:40	17:40	Applied Analytical Model for Latency Evaluation of RISC-V Security Monitor Justin Tullos , Scott Graham and Pranav Patel , Air Force Institute of Technology, USA	The Overton Window: a Tool for Information Warfare George Daniel Bobric , "Carol I" National Defence University, Romania	
13:00	18:00	Challenges in Bridging the Law Enforcement Capability Gap Anne Kohnke , Greg Laidlaw and Charles Wilson , University of Detroit Mercy, USA (WIP)	Improving Joint All Domain Operations (JADO) Education Christopher Voltz , Mark Reith , David Long and Richard Dill , AFIT, Dayton, Ohio, USA	I Know You by Heart: Biometric Authentication by means of ECG Sensors Christoph Lipps , Lea Bergkemper and Hans Dieter Schotten . German Research Center for Artificial Intelligence, Kaiserslautern, Germany Towards Dynamically Shifting Cyber Terrain with Software-Defined Networking and Moving Target Defense Robert Larkin , Steven Jensen , Daniel Koranek , Marth Reith and Barry Mullins , Air Force Institute of Technology, USA
13:20	18:20		Mathematical Models for Solving the Problems of Information Warfare Vyacheslav Burlov , Peter the Great Saint-Petersburg Polytechnic University, Russia	Domestic Terrorism, Racism, And White Supremacy: An Anticipatory Ethical Analysis Richard L. Wilson , Towson University, USA
13:40	18:40	Room 1		
		Summary of the Conference and Awards to the winner of the Best PhD Paper and Best Poster		
13:50	18:50	<i>Close of Conference</i>	<i>Close of Conference</i>	<i>Close of Conference</i>