

18th International Conference on Cyber Warfare and Security - ICCWS 2023 9 - 10 March 2023 Towson University, Baltimore County, Maryland, USA		
EST	Thursday 9 March 2023	
08:30	Conference Registration (Towson University Cyber Center, 10 West, West Burke Avenue, Towson, 21286) Zoom Room 1 opens for virtual participants	
09:00	Room 165 and Zoom Room 1 Welcome and Opening of the Conference	
09:15	Keynote Presentation: Justin Fanelli, Technical Director, Dept of Navy PEO Digital and Georgetown University "Can Zero Trust Restore Our Ailing Trust?"	
10:00	Conference splits into streams	
	Room 165 Stream A: Resilience Chair: Dana Weinberg	Room 162 Stream B: Mini Track on Cyber Operations in the Global Information Environment Chair: Edwin Covert
10:20	Towards a Scientific Definition of Cyber Resilience Sidney C. Smith , DEVCOM Army Research Laboratory, Adelphi, MD, USA (P)	Predictors of Human Efficiency in Radar Detection Tasks Elizabeth Fox , Christopher Stevens , Air Force Research Laboratory, Wright-Patterson Air Force Base, Arielle Stephenson and Gregory Bowers , Ball Aerospace, USA (P)
10:40	Basic Elements of Cyber Security for a Smart Terminal Process Jouni Pöyhönen , Jussi Simola and Martti Lehto , University of Jyväskylä, Finland (P)	Blockchain Forensics: A Modern Approach to Investigating CyberCrime in the Age of Decentralisation Saminu Salisu , Barry Pene , Bilic, London, UK and Filipov Velitchko , TU Wien, Vienna (P)
11:00	Cyber Security Training in Finnish Basic and General Upper Secondary Education Martti Lehto and Pekka Neittaanmäki , University of Jyväskylä, Finland (P)	The Great Replacement, White Genocide and The War on Multiculturalism: An Anticipatory Ethical Analysis Richard Wilson , Towson University, Baltimore, USA (Presentation only) (P)
11:20	Use of Intrusion Detection Systems in Vehicular Controller Area Networks to Preclude Remote Attacks Anthony J Monge and Todd Andel , University of South Alabama, Mobile, USA	Zero Trust is not Enough: Mitigating Data Repository Breaches John .S. Hurley , ODNI, Bethesda, USA (P)
11:40	Secure Cloud Migration Strategy (SCMS): A Safe Journey to the Cloud Dalal Alharthi , University of Arizona, Tucson, USA (P)	Spies, Saboteurs & Scoundrels: How Russia, China & Nefarious Actors Are Hacking Industrial Controls Systems & Other xIoT Devices Brian Contos , Phosphorus Cybersecurity, Dublin, USA (Presentation only) (P)
12:00	Break - Lunch	
	Room 165 Stream A: Mini Track on Interdisciplinary Research Chair: Char Sample	Room 162 Stream C: PhD and Masters Colloquium Chair: John Hurley
13:00	Cyber Warfare 2023 Next Level \$#@! You Need to Know Michele Boland , Check Point Software Technologies, Fort Worth, USA (Presentation only) (P)	Identifying Commonalities of Cyberattacks Against the Maritime Transportation System Rebecca Rohan , Marymount University, Arlington, Virginia, USA (PhD)
13:20	Implications of Cyberbiosecurity in Advanced Agriculture Simone Stephen , Keitavius Alexander , Old Dominion University, Norfolk, Lucas Potter and Xavier-Lewis Palmer , BiosView, Oswego, USA (P)	Using Military Cyber Operations as a Deterrent Maria Keinonen , Finnish Defence Forces, Helsinki, Finland (PhD)
13:40	Cyber Salami: A New Theory of Adversary Strategy Gentry Lane , ANOVA Intelligence and/or Potomac Institute for Policy Studies, Washington, DC, USA (Presentation only) (P)	Categorizing Cyber Activity Through an Information-Psychological and Information-Technological Perspective, Case Ukraine Harry Kantola , Finnish National Defence University, Helsinki, Finland (PhD)
14:00	Stories, Narratives and Scripts in Information Warfare and Domestic Terrorism: An Anticipatory Ethical Analysis Richard Wilson , Towson University, Baltimore, United States (Presentation only) (P)	Locality-based Electromagnetic Leakage Assessment Using CNN Ian Heffron and James Dean , Air Force Institute of Technology, Wright-Patterson Air Force Base, USA (Masters)
14:20	Break	
	Room 165 Stream A: Cyber Issues Chair: Siphesihle Sithungu	Room 162 Stream B: Mini Track on Cyber Operations in the Global Information Environment Chair: Christoph Lipps
14:50	Scaling Security: What Shifting Left Was Supposed To Mean Dwayne McDaniel , GitGuardian, Chicago, USA (Presentation only) (P)	Nuclear Weapons, Cyber Warfare, and Cyber Security Ethical and Anticipated Ethical Issues Richard Wilson and Alexia Fitz , Towson University, Baltimore, USA (P)
15:10	Review of End-to-End Encryption for Social Media Vijay Bhuse , Grand Valley State University, Allendale, MI, USA (P)	Re-instilling Operational Rigor in the Cyber Domain Richard Losier , Rainmaker Venture Group LLC, Pasadena, USA (Presentation only) (P)
15:30	Reform the Police, Information warfare and the Future of Law Enforcement: An Ethical and Anticipatory Ethical Analysis Michael Shifflett , U S Homeland Security, Towson and Richard Wilson , Towson University, Baltimore, USA (Presentation only) (P)	Cyber-Physical Attack Using High Power RF in Havana, Cuba Allyffazzkkmn Argudo and Ghislaine Nasibu Mwana , Marymount University, Alexandria, USA (P)
15:50	Case Study: Conducting a Risk Assessment for an Electrical Utility Edwin Covert , Colorado State University Global, Aurora, Colorado, USA (P)	Cyber Workforce is a Team Challenge Scott Tousley , IT Cadre, USA (Non Academic- Presentation Only)
16:10	Close of Conference Day	
19:00	Conference Dinner at 7 West Bistro Grille (7 W Chesapeake Ave, Towson, MD 21204)	

EST	Friday 10 March 2023	
08:30	Zoom Room opens for virtual participants	
09:00	Room 1 65 & Zoom Room 1 Opening Messages	
09:05	Keynote Presentation: Dr. George R. Lucas, Stockdale Center at the U.S. Naval Academy. <i>Military Ethics & Algorithmic Warfare: from the Battlefield to the Cyber Domain</i>	
09:50	Introduction to ICCWS 2024	
10:00	Poster Presentations	
10:30	Conference splits into streams	
	Room 165 Stream A: Mini Track on The Social Foundations of Information Warfare Chair: Jason C. Brown	Room 162 Stream B: Chair: Leigh Armistead
10:40	Anti-American Stance in Turkey: A Twitter Case Study Hamdi Kavak , Gowri Prathap , George Mason University, Alex Korb , Old Dominion University and Luke Palmieri , George Mason University, USA (P)	Cybersecurity in Digital Transformation: Analysis of Past Research and Future Directions Belkhamza Zakariya , Ahmed Bin Mohammed Military College, Doha, Qatar (P)
11:00	Russian Influence Operations during the Invasion of Ukraine Joseph Littell and Nicolas Starck , Army Cyber Institute, West Point NY, United States (P)	The Occult Roots of Q Anon: Ethical and Anticipated Ethical Issues Richard Wilson , Towson University, Baltimore and Michael Shifflett , U S Homeland Security, USA (Presentation only) (P)
11:20	Social-Engineering, Bio-economies and Nation-State Ontological Security: A Commentary Brandon Griffin , Keitavius Alexander CySecSol, Lucas Potter and Xavier-Lewis Palmer , BiosView, USA (P)	An Analysis of Crypto Scams during the Covid-19 Pandemic: 2020-2022 Johnny Botha , Danielle Botha , CSIR, South Africa and Louise Leenen , University of Western Cape, South Africa (P)
11:40	How the Russian Influence Operation on Twitter Weaponized Military Narratives Dana Weinberg , Queens College-CUNY, Jessica Dawson , Military Academy at West Point and April Edwards , US Naval Academy, USA (P)	Managing Large-Scale Heterogeneous Deployments for Cybersecurity John S. Hurley , ODNI, Bethesda, USA (P)
12:00	Break - Lunch in ETEC Lobby	
	Room 165 Stream C: Privacy and Healthcare Chairs: Elizabeth Fox	Room 162 Stream A: Threats Chair: Rich Losier
13:00	Developing Privacy Incident Responses to Combat Information Warfare Sean McElroy and Lisa McKee , Dakota State University, USA (P)	Cyber Threat Analysis in Smart Terminal Systems Jussi Simola , Jouni Pöyhönen and Martti Lehto , University of Jyväskylä, Jyväskylä, Finland (P)
13:20	A Quantitative Risk Assessment Framework for the Cybersecurity of Networked Medical Devices Maureen S. Van Devender and Jeffrey Todd McDonald , University of South Alabama, Mobile, AL USA (P)	Security Doesn't Need To Be Fun: Understanding OWASP Dwayne McDaniel , GitGuardian, Chicago, USA (Presentation only) (P)
13:40	QAnon, Social Media Warfare, and Conspiracy Theories: An Ethical and Anticipatory Ethical Analysis Michael Shifflett , U S Homeland Security and Richard Wilson , Towson University, Baltimore, USA (Presentation only) (P)	The Impact of Edge Computing on the Industrial Internet of Things Nkata Sekonya and Siphesihle Sithungu , University of Johannesburg, South Africa (P)
14:00	Room 165 & Zoom Room 1 Summary of the Conference, Awards to the winner of the Best PhD Paper and Best Poster	
14:30	Close of Conference	
	Poster Presentations	
	Physical Posters Friday 10th March 10:00-10:30 <i>poster presenters to stand with their posters and present the work</i>	Virtual Posters Friday 10th March 10:00-10:40 Zoom Room 1 <i>5 minute presentations with time for questions and discussion</i>
	Using Deep Reinforcement Learning for Assessing the Consequences of Cyber Mitigation Techniques on Industrial Control Systems Terry R. Merz and Romarie Morales Rosado , U-Albany/CEHC, Albany, New York, USA (WIP) (P)	Cyber Ranges: A Look at the Northern Hemisphere Kathrin Moog , Andrew C Dwyer , Jantje Silomon , Mischa Hansel Institute for Peace Research and Security Policy at the University of Hamburg, Germany, Information Security Group, Royal Holloway, University of London, Egham, UK (invited)
	Healthcare Cybersecurity Hygiene in the Age of Electronic Medical Records Azza AlGhamdi , Marymount University, Fairfax Station, United States (Poster Only) (P)	Combating Social Media Manipulation through Artificial Intelligence and Game-based Solutions' Clara Maathuis , Open University, Heerlen, the Netherlands and Sabarathinam Chockalingam , Institute for Energy Technology, Norway (invited Poster) (V)
	Cybersecurity Governance of Operational Technology in Sector Connected Smart Energy Networks CSG Tapio Frantti , Reijo Savola and Jussi Simola , University of Jyväskylä, Finland (invited Poster) (P)	A Cognitive Model of a Radar Detection Task Alexander R. Hough , Christopher Stevens and Elizabeth Fox Air Force Research Laboratory, Wright-Patterson Air Force Base, USA (invited Poster - V)
	Towards a Medical Digital Twin: Modern Biometrics and their Relevance for Sensor Fusion Christoph Lipps , Jan Herbst , Lea Bergkemper , Jan Petershans , Matthias Rüb and Hans Dieter Schotten , German Research Center for Artificial Intelligence, Germany (invited Poster) (V)	

VIRTUAL TIMETABLE

		19th International Conference on Cyber Warfare and Security - ICCWS 2023 9 - 10 March 2023 Towson University, Baltimore County, Maryland, USA		
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09:00	14:00	Room 165 and Zoom Room 1 Welcome and Opening of the Conference		
09:15	14:15	Keynote Presentation: Justin Fanelli, Technical Director, Dept of Navy PEO Digital and Georgetown University "Can Zero Trust Restore Our Ailing Trust?"		
10:00	15:00	Conference splits into streams		
		Zoom Room 1 Stream C: Training Chair: Stephen Treacy	Zoom Room 2 Stream D: Cyber Issues Chair: Virginia Greiman	
10:20	15:20	Improvements on Hiding x86-64 Instructions by Interleaving William Mahoney , George Grispos and Sayonnh Mandal , University of Nebraska at Omaha, J. Todd McDonald , University of South Alabama, USA (V)	Social Media Manipulation Deep Learning based Disinformation Detection Clara Maathuis and Rik Godschalk , Open University, Heerlen, The Netherlands (V)	
10:40	15:40	Towards the Usefulness of Learning Factories in the Cybersecurity Domain Namosha Veerasingam , Thuli Mkhwanazi and Zubeida Dawood , CSIR, Pretoria, South Africa (V)	Modelling the Influential Factors Embedded in the Proportionality Assessment in Military Operations Clara Maathuis , Open University of the Netherlands, Heerlen, The Netherlands and Sabarathinam Chockalingam , Institute for Energy Technology, Halden,	
11:00	15:00	Lesson Plan: An Interdisciplinary Approach to Teaching Cyber Warfare Concepts Donna Schaeffer , Marymount University, New Hope and Patrick Olson , National University, USA (V)	Gaps in Asset Management Systems to Integrate Railway Companies' Resilience Jyri Rajamäki , Jari Savolainen , Rauno Pirinen , Laurea University of Applied Sciences, Espoo, Finland and Eduardo Villamor Medina , ETRA, Valencia, Spain	
11:20	15:20	Social Media Manipulation Awareness through Deep Learning based Disinformation Generation Clara Maathuis , Open University of the Netherlands, Heerlen, and Iddo Kerkhof , NLP	Nuclear Cyber Attacks: A Study of Sabotage and Regulation of Critical Infrastructure Virginia Greiman , Boston University, MA, USA (V)	
11:40	15:40	On the Use and Strategic Implications of Cyber Ranges in Military Contexts: A Dual Typology Andrew Dwyer , Royal Holloway, University of London, UK, Mischa Hansel , Kathrin Moog , Jantje Silomon , Institute for Peace Research and Security Policy at the University of Hamburg (IFSH) Hamburg, Germany (V)	Naïve Bayes Supervised Learning based Physical Layer Authentication: Anti-Spoofing techniques for Industrial Radio Systems Andreas Weinand , Michael Karrenbauer , University of Kaiserslautern, Germany and Christoph Lipps and Hans D. Schotten , German Research Center for Artificial Intelligence, Germany (V)	
12:00	17:00	<i>Break</i>	<i>Break</i>	
		Zoom Room 1 Stream C: PhD and Masters Colloquium Chairs: Clara Maathuis	Zoom Room 2 Stream D: Testing, Evaluation and Resilience Chair: Tabisa Ncubekezi	Zoom Room 3 Stream E: Mini Track on Interdisciplinary Research in Cybersecurity Chair: Donna Schaeffer
13:00	18:00	Evaluating a Non-platform-specific OCR/NLP system to detect Online Grooming Jake Street and Funminiye Olajide , Nottingham Trent University, UK (PhD)	Managing Variable Cyber Environments with Organizational Foresight and Resilience Thinking Eveliina Hytönen , Jyri Rajamäki and Harri Ruoslahti , Laurea University of Applied Sciences, Espoo, Finland (V)	Biocybersecurity and Deterrence: Hypothetical Rwandan Considerations Issah Abubakari Samori , minoHealth AI Labs, Accra, Ghana Gbadebo Odularu , Id Dominion University, Norfolk, USA, Lucas Potter and Xavier-Lewis Palmer , BiosView, Oswego, USA (V)
13:20	18:20	A Unified Forensics Analysis Approach to Digital Investigation Ali Alshumrani, Nathan Clark and Bogdan Ghita, University of Plymouth, UK (PhD)	Search and CompAre Reverse (SCAR): A Bioinformatics-Inspired Methodology for Detecting File Remnants in Digital Forensics George Grispos , William Mahoney and Sayonnh Mandal , School of Interdisciplinary Informatics, University of Nebraska-Omaha, USA (V)	An Automated Post-Exploitation Model for Cyber Red Teaming Ryan Benito , Alan Shaffer and Gurinder Singh , Naval Postgraduate School, Monterey, California, USA (V)
13:40	18:40	Demonstrating Redundancy Advantages of a Three-Channel Communication Protocol Scott Culbreth and Scott Graham , Air Force Institute of Technology, USA (Masters)	Securing Commercial Satellites for Military Operations: A Cybersecurity Supply Chain Framework Courtney Fleming , Mark Reith and Wayne Henry , Air Force Institute of Technology, Wright-Patterson AFB, USA (V)	Social Robots Privacy Enhancement Using Colored Petri Net (CPN) for Behavior Modeling: A Case Study of Asus Zenbo Robot Benjamin Yankson , University at Albany, USA, AlMaeeni Fadya and Farkhund Iqbal , Zayed University, United Arab Emirates (V)
14:00	19:00	DACA: Automated Attack Scenarios and Dataset Generation Risto Vaarandi and Frank Korving , Tallinn University of Technology, Estonia (Masters)	Development and Analysis of a Reconnaissance-Technique Knowledge Graph Elsa Deitz , Eve Cohen , Jordana Wilkes The Baldwin School, Bryn Mawr and Thomas Heverin , Girls Learn Cyber, Inc., Philadelphia, USA (V)	Robots Security Assessment and Analysis Using Open-Source Tools Benjamin Yankson , Tyler Loucks , Andrea Sampson and Chelsea Lojano , University at Albany, USA (V)
14:20	19:20	Offensive Cyberspace Operations for Cyber Security Gazmend Huskaj , Geneva Centre for Security Policy, Switzerland (PhD)	Evaluation of Quantum Key Distribution for Secure Satellite-integrated IoT Networks Andrew Edwards , Ronald Mulinde , Yee Wei Law and Jill Slay , University of South Australia, Adelaide, Australia (V)	Detecting and Tracking Hypersonic Glide Vehicles: A Cybersecurity-Engineering Analysis of Academic Literature Yee Wei Law , John Joshua Gotiza Gliponeo , Dilpreet Singh , John McGuire , Jiajun Liang , Sook-Ying Ho and Jill Slay , University of South Australia, Mawson Lakes, Australia (V)
		Towards a Critical Review of Cybersecurity Risks in Anti-Poaching Systems Christelle Steyn and Dewald Blaauw , Stellenbosch University, South Africa (Masters)		
		A Review and Testing of Fault Tolerance Levels of Anti-Poaching Cybersecurity System Isabelle Heyl , Julia Stone , Takudzwa Vincent Banda , Vian Smit and Dewald Blaauw , Stellenbosch University, South Africa (Masters)		
		<i>Close of Virtual Conference Day</i>	<i>Close of Virtual Conference Day</i>	<i>Close of Virtual Conference Day</i>

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		Zoom Room 1 Stream C: Threats Chair: Alan Shaffer VIRTUAL	Zoom Room 2 Stream C: Cyber Effectiveness Chair: Bruce Watson VIRTUAL
10:40	15:40	Fingerprinting Network Sessions for the Discovery of Cyber Threats Christiaan Kloppe and Jan Eloff, University of Pretoria, South Africa (V)	Methods, Tools and Techniques for Effective Cyber Exercises David Tileston, Carnegie Mellon University, Pittsburgh, USA (Presentation only) (V)
11:00	16:00	Organizational Cybersecurity Post The Pandemic: An Exploration of Remote Working Risks and Mitigation Strategies Stephen Treacy, Anoop Sabu, Thomas Bond, Joseph O'Sullivan, Jack Sullivan, Peter Sylvester, Cork University Business School, Ireland (V)	S-400s, Disinformation and Anti-American Sentiment in Turkey Alex Korb, Saltuk Karahan, Old Dominion University, Gowri Prathap, Ekrem Kaya, Luke Palmieri, Hamdi Kavak, George Mason University, USA (V)
11:20	16:20	Digital Insanity: Exploring the Flexibility of NIST Digital Identity Assurance Levels Kenneth Myers, Marymount University, Arlington, Virginia, USA (V)	Risk Likelihood of Planned and Unplanned Cyber-Attacks in Small Business Sectors: A Cybersecurity Concern Tabisa Ncubukezi, Cape Peninsula University of Technology, Cape Town, South Africa (V)
11:40	16:40	Commentary on Healthcare and Disruptive Innovation Hilary Finch, Xavier-Lewis Palmer, Old Dominion University, Norfolk, USA, Affia Abasi-Amefon, University of Tartu, Estonia, Jung Woosub, William & Mary, USA and Lucas Potter, BiosView, USA (V)	UAV Payload Identification with Acoustic Emissions and Cell Phones Hunter Doster and Barry Mullins, Air Force Institute of Technology, USA (Masters) - (V)
12:00	17:00	Break	
		Zoom Room 1 Stream B: IoTs and Ret-gadgets Chair:	
13:00	18:00	Digital Geopolitics: A Review of the Current State Gazmend Huskaj, Geneva Centre for Security Policy, Geneva, Switzerland (V)	
13:20	18:20	LoRaWAN & The Helium Blockchain: A Study on Military IoT Deployment Michael A. Reyneke, Mark G. Reith and Barry E. Mullins, Air Force Institute of Technology, Wright-Patterson AFB, USA (V)	
13:40	18:40	Ret-gadgets in RISC-V-based Binaries Resulting in Traps for Hijackers Toyosi Oyinloye, Thaddeus Eze, University of Chester, Lee Speakman, University of Salford, UK (V)	
14:00	19:00	Room 165 & Zoom Room 1 Summary of the Conference: Awards to the winner of the Best PhD Paper and Best Poster	
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		Healthcare Cybersecurity Hygiene in the Age of Electronic Medical Records Azza AlGhamdi, Marymount University, Fairfax Station, United States (Poster Only) (P)	Combating Social Media Manipulation through Artificial Intelligence and Game-based Solutions' Clara Maathuis, Open University, Heerlen, the Netherlands and Sabarathinam Chockalingam, Institute for Energy Technology, Norway (invited Poster) (V)
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		Towards a Medical Digital Twin: Modern Biometrics and their Relevance for Sensor Fusion Christoph Lipps, Jan Herbst, Lea Bergkemper, Jan Petershans, Matthias Rüb and Hans Dieter Schotten, German Research Center for Artificial Intelligence, Germany (invited Poster) (V)	