CSCE 2025 BOOK of ABSTRACTS

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Note that the titles of papers, the authors' names and the abstracts that appear in this book ("Book of Abstracts") were extracted from the papers that were submitted to the EVALUATION web portal (i.e., extracted from the first draft submissions). The official published proceedings/book will have any and all changes/revisions that authors may have done.

KEYNOTE ADDRESSES

(The Keynote lectures are open to all participants)

CONGRESS WELCOME REMARKS

Professor Emeritus Hamid R. Arabnia
(Chair, Steering Committee & Coordinator), School of Computing, University of Georgia, USA;
Editor-in-Chief, The Journal of Supercomputing (Springer Nature);
Editor, Transactions of Computational Science & Computational Intelligence
Fellow, Center of Excellence in Terrorism, Resilience, Intelligence & Organized Crime Research (CENTRIC)

KEYNOTE TITLE:

Empowering Cyber Defense: The UCS Ecosystem of Data, Tools, and Awareness

Dr. Arash Habibi Lashkari
Canada Research Chair and Associate Professor in Cybersecurity
Founder and Director of the Behavior-Centric Cybersecurity Center (BCCC)
Co-founder and Director of the Cybersecurity Cartoon Award (CSCA)
York University, Toronto, Canada

Abstract - Data has become the cornerstone of intelligent, proactive cybersecurity in today's threat landscape. This talk explores how high-quality, purpose-built datasets fuel the development of AI-powered threat detection, classification, and response systems. Drawing on the open-access resources of the Understanding Cybersecurity Series (UCS) developed at York University's Behaviour-Centric Cybersecurity Center (BCCC), we will showcase the design and application of novel cybersecurity datasets and analyzers, including encrypted traffic, memory snapshots, and logs, crafted to train and evaluate machine learning models in real-world scenarios. We will also highlight tools like NTLFlowLyzer, VolMemLyzer, and SCsVulLyzer, which support advanced profiling and zero-day threat detection. By bridging data engineering, explainable AI, and community access, UCS provides a unique platform for researchers, educators, and industry to advance threat intelligence capabilities. The session will conclude with insights into best practices for dataset development and an open call for collaboration across the cybersecurity ecosystem.

PANEL DISCUSSION:

Artificial Intelligence: Pros, Cons, and Implications

Panelist: Prof. Leonidas Deligiannidis
Professor of Computer Science
School of Computing and Data Science
Wentworth Institute of Technology, Boston, MA, USA

Panelist: Dr. Salem Othman
Associate Professor of Computer Science
School of Computing and Data Science
Wentworth Institute of Technology, Boston, MA, USA

Panelist: Dr. John N. Carbone
Senior Technical Director, Adjunct Professor
Everfox LLC, Baylor University, Texas, USA

Moderator & Panelist: Prof. Hamid R. Arabnia
Professor Emeritus, Computer Science
School of Computing
The University of Georgia, Georgia, USA

Abstract - NA

INVITED LECTURE:

The Future is Integrated: Predictive Intelligence for Semiconductor Supply Chains

Deepshikha Shekhawat
Business Intelligence Program Manager, AMD, Inc.
Affiliated with Fortune 500 Companies, including AMD and Applied Materials.

Abstract - In the fast-paced semiconductor industry, fragmented data across teams hampers efficiency and decision-making. This session explores how to break down these silos using smart data architecture and predictive analytics to streamline supply chains and reduce time-to-market. Drawing from 12+ years of experience, I'll share real-world strategies to unify critical data, define effective KPIs, and enable real-time insights into supplier performance, lead times, and costs. Attendees will gain actionable guidance on building robust, cross-functional data infrastructure that enhances forecasting, boosts transparency, and empowers all levels of the organization to make faster, data-driven decisions that drive measurable business outcomes.

Best Practice of Scenario-Based Modeling for Humanoid Software Validation

Sangho Lee, Janghwan Kim, R. Young Chul Kim
Hongik University, Sejong, Republic of Korea;
Rastech, Daejeon, Republic of Korea

Abstract - Recent advances in adapting artificial intelligence technology have revolutionized the field of humanoid robots. The intelligence of robots is based on reinforcement learning and AI models. However, due to the nature of robot software that continuously learns and reacts through interaction with the real environment, it isn't easy to validate safety, reliability, and accuracy using only existing software testing methodologies. To address these issues, we apply scenario-based modeling in software validation to humanoid robot software, incorporating reinforcement learning models. In particular, the 'mode selection' function of humanoid robots is presented as an application case, and a systematic procedure is performed from requirement analysis to scenario creation, refined scenario-based test case creation, and scenario execution and verification using a behavior tree. This is expected to contribute to maintaining the stability of humanoid robot systems by systematically detecting unpredictable behaviors in humanoid software and enhancing efficiency and reliability by validating the decision-making process of AI models using scenario-based modeling based on behavior trees.

The Use of ChatGPT to Teach Coding Inhibits Software Development or Supplements Coding Education

Jose A. Vega, Juan B. Varela, Angel Ojeda
Department of Technology & Security, Bowie State University, Bowie, Maryland, USA;
Montgomery Community College, USA;
Universidad de Puerto Rico, Puerto Rico;
Universidad del Turabo, Puerto Rico

Abstract - This study emphasizes the true driving factors behind the adoption of AI technology specifically for coding applications. We conducted a survey targeting faculty members in technology, information systems, computer science, and cybersecurity departments across all universities in the state of Maryland. For this investigation, the Technology Acceptance Model was selected as the guiding framework. Five key factors were examined as influences on the acceptance of ChatGPT use within Maryland universities: (1) Inhibit software development and (2) Provide coding education. In this quantitative research, we identified several factors that influence the intended use of ChatGPT for coding purposes. A survey was conducted with a sample of 330 faculty members specializing in computer-related and technology fields, using Google Forms and Microsoft Forms platforms. We examined the impact of each factor on the adoption of advanced AI technologies within Maryland universities. Using SPSS and PLS statistical software for analysis, the findings revealed that faculty members in Maryland considered only one out of the two model variables to be significant. Specifically, one independent variable — serving as a valuable providing coding education — showed a positive correlation with the intention to adopt ChatGPT. The other factor — inhibiting software development was not found to be significant in influencing the decision to implement ChatGPT as a coding tool in the classroom. This study highlights that while ChatGPT offers notable advantages, it also presents certain challenges within the coding education environment. Further investigation into how students are engaging with ChatGPT could provide additional valuable insights.