

FCS 2022

International Conference on
**FRONTIERS IN
CYBER SECURITY**

13 - 15 Dec. 2022 | Virtual Event

Organized by



The Department of Computer Science, KNUST

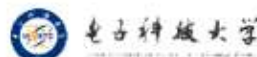
in collaboration with



The Center for Cyber Security,
University of Electronic Science and
Technology of China (UESTC)



Huaiyin Institute of Technology
(HYIT)



13 Dec 2022

FCS 2022 PROGRAM OUTLINE

09:00 - 9:30 GMT	Opening session (Prof. Leanard Amekudzi)
09:30 - 9:40 GMT	Take a Photo
	Session 1: IoT Security (Session Chair: Prof. Mingwu Zhang)
09:40 - 10:55 GMT	A Secure and Efficient Heterogeneous Signcryption Scheme for IIoT <i>Chunhua Jin, Chenhao Li, Wenyu Qin, Xiaobing Chen, Guanhua Chen</i> A Federated Learning Based Privacy-Preserving Data Sharing Scheme for Internet of Vehicles <i>Yangpeng Wang, Ling Xiong, Xianhua Niu, Yunxiang Wang, Dexin Liang</i> LightGBM-RF: A Hybrid Model for Anomaly Detection in Smart Building <i>Otuekong Ekpa, Kate Takyl, Rose-Mary Owusua Mensah Gyening</i> Enabling Hidden Frequency Keyword-Based Auditing on Distributed Architectures for a Smart Government <i>Jingting Xue, Shuqin Luo, Lingjie Shi, Xiaojun Zhang, Chunxiang Xu</i> A Lightweight Certificateless Searchable Public Key Encryption Scheme for Medical Internet of Things <i>Xiaoguang Liu, Yingying Sun, Hao Dong</i>
10:55 - 12:00 GMT	Lunch Break
12:00 - 13:00 GMT	Keynote Address 1 Title: Anonymous Single Sign-On with Proxy Re-Verification Prof. Jinguang Han (Southeast University, China)
	Session 2: Artificial Intelligence and Cyber Security (Session Chair: Prof Chunhua Jin)
13:00 - 14:30 GMT	Cross-site Scripting Threat Intelligence Detection Based on Deep Learning <i>Zhonglin Liu, Yong Fang, Yijia Xu</i> Power Analysis Attack Based on Lightweight Convolutional Neural Network <i>Xiang Li, Ning Yang, Aidong Chen, Weifeng Liu, Xiaoxiao Liu, Na Huang</i> Enhancing Port Scans Attack Detection Using Principal Component Analysis and Machine Learning Algorithms <i>Emmanuel Kwesi Baah, Steven Yirekyi, Dominic Asamoah, Stephen Opoku Oppong, Edward Opoku-Mensah, Benjamin Tei Partey et al.</i> SVFLS: A Secure and Verifiable Federated Learning Training Scheme <i>Yi Liu, Guoxiong Hu, Yudi Zhang, Mingwu Zhang</i> A Pragmatic Label-Specific Backdoor Attack <i>Yu Wang, Haomiao Yang, Jiasheng Li, Mengyu Ge</i> Threat Landscape Across Multiple Cloud Service Providers Using Honeypots as an Attack Source <i>Samuel Kelly Brew, Emmanuel Ahene</i>

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9:00 - 10:00 GMT	Keynote Address 2 Title: A Multi-Layered Data Encryption and Decryption Scheme Based on Genetic Algorithm and Residual Numbers Prof. Edward Yellakuor Baagyere (C.K Tedam University of Technology and Applied Sciences, Ghana)
	Session 3: Blockchain Technology and Application (Session Chair: Prof Michael Asante)
10:00 - 11:15 GMT	AP-HBSG: Authentication Protocol for Heterogeneous Blockchain-Based Smart Grid Environment <i>Egide Nkurunziza, Tandoh Lawrence, Elfadul Issameldeen, Gervais Mwitende</i> Blockchain-Based Patient-to-Patient Health Data Sharing <i>Sandro Amofa, Jianbin Gao, Maame Gyamfua Asante-Mensah, Charles Roland Haruna, Xia Qi</i>

	Efficient and Automatic Pseudonym Management Scheme for VANET with Blockchain <i>Xiangsong Zhang, Ming Yuan, Zhenhua Liu</i> Ethereum Contract Honeypot Risk Analysis <i>Motaya Ishimaki, Kazumasa Omote</i> A Gas Cost Analytical Approach Based on Certificateless Key Encapsulation Protocol for Medicalized Blockchains <i>Abigail Akosua Addobea, QianMu Li, Isaac Amankona Obiri, Jun Hou</i>
11:15 - 12:15 GMT	Coffee Break
	Session 4: Cryptography (Session chair: Dr. Ayembele Andrew Omala)
12:15 - 13:30 GMT	A Universal Lightweight Privacy-Preserving Multifunctional Data Handling Scheme <i>Yulian Li, Hua Shen</i> New Trapdoor and Preimage Sampling on NTRU Lattice <i>Chengrong Liu, Chunming Tang, Huiwen Jia</i> Secure EHR Sharing Scheme Based on Limited Sanitizable Signature <i>Yang Yang, Bixia Yi, Yonghua Zhan, Minming Huang</i> A Rotating Multi-secret Color Visual Cryptography Scheme Based on Meaningful Shares <i>Yanyan Han, Yikun Zhou, Peng Li, Xinyang Liu</i> Updatable ElGamal Encryption Scheme with Forward and Backward Security for Cloud Storage <i>Zhenhua Liu, Jingwan Gong, Yuanju Ma, Yaxin Niu, Baocang Wang</i>

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	Session 5: Database Security (Session chair: Dr. Abdul Salaam Gaddafi)
9:00 - 9:45 GMT	A Comparative Analysis of Security Features and Concerns in NoSQL Databases <i>Evans Ankamah, Charles Roland Haruna, Francis Xavier Kofi Akotaye, Brighter Agyemang, Kwame Opuni-Boachie Obour Agyekum, Alexander Asante et al.</i> Improving Online Restore Performance of Backup Storage via Historical File Access Pattern <i>Xingpeng Tang, Jingwei Li</i> Securely and Efficiently Nearest Neighbor Query Scheme Based on Additive Secret Sharing <i>Qikai Feng, Bai Liu</i>
	Session 6: Quantum Cryptography (Dr. Kate Takyl)
9:45 - 10:00 GMT	Quantum Information Splitting Scheme of Arbitrary Three-Qubit State by Using a Four-Qubit Cluster State and a Bell State <i>Dongfen Li, Jie Zhou, Xiaolong Yang, Yuqiao Tan, Yundan Zheng, Xiaofang Liu</i>
	Session 7: Network Security (Dr. Kate Takyl)
10:00 - 10:15 GMT	A Manipulated Overlapped Voltage Attack Detection Mechanism for Voltage-Based Vehicle Intrusion Detection System <i>Long Yin, Jian Xu, Heqiu Chai, Chen Wang</i>

The proceedings can be downloaded via this link
<https://link.springer.com/book/10.1007/978-981-19-8445-7>