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## Wolfgang Hillen Summer School 2022



CECS hosted Wolfgang Hillen Summer School from October 17-21, 2022, on UCI campus. This program included master students and doctoral researchers from Technical University of Munich, Technical University of Braunschweig, and UCI who worked together to explore modeling and design of self-X Multi-Processor System-on-Chip (MPSoC) platform.

The goal of Wolfgang Hillen Summer School is to use a model called “Information Processing Factory” (IPF) to demonstrate how self-X properties can be achieved across multiple abstraction levels of a MPSoC platform and for a mixed critical application scenario. IPF encourages self-organized learning and formal reactive methods to ensure the applicability of self-X systems in safety-critical and high-availability applications. IPF concepts and models are formally described in lecture series. Different perspectives of multi-disciplinary research groups and IPF applications are provided in seminar talks. And hands-on experience with different techniques that enable self-X features on embedded systems are given in laboratories and workshops.



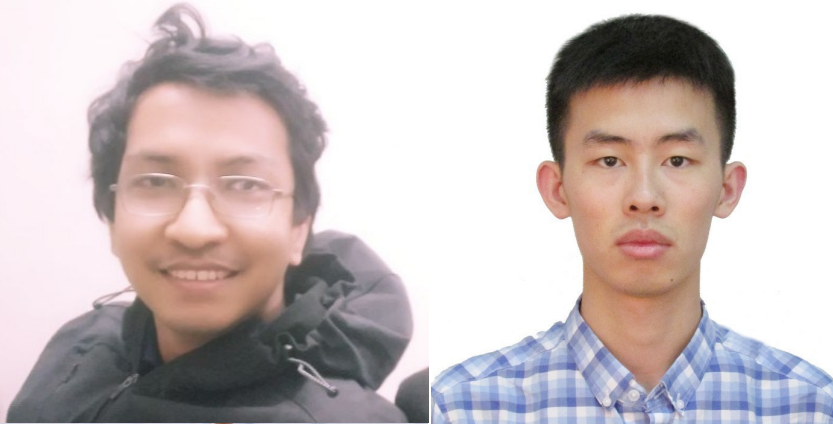
## MECPS Symposium 2022



MECPS hosted an end-of-the-year symposium for the MECPS graduating class on December 9, 2022 at UCI campus. At the symposium, teams presented their projects to their peers and faculty. Students, faculty, and visitors voted on the best project. Two projects tied: The Development of Autonomous Drone for GPS-Less Inspection by Ashish Anand, Vishal Reddy Gade, Pratyush Mangalakattu, and Sagar Patel (picture above), and the Edith Wearable Device by Panyang Chen, Hanyong Liu, Haoran Liu, Yunxuan Shi, Haozhong Tan, and Xiao Wang (picture below).



## ACSAC 2022 Best Paper Award-“BayesImposter: Bayesian Estimation Based .bss Imposter Attack on Industrial Control Systems”



Research paper “BayesImposter: Bayesian Estimation Based .bss Imposter Attack on Industrial Control Systems” by CECS affiliated graduate students Anomadarshi Barua (left) and Lelin Pan (right), guided by CECS affiliated Prof. Mohammad Abdullah Al Faruque, received the best paper award for the 2022

Annual Computer Security Applications Conference (ACSAC 2022). Their research demonstrated Bayesian estimation on memory deduplication-based Row-hammer attack on virtual machines by exploiting the .data section of a DLL file.

## ACM CCS 2022 Accepted Paper-“A Wolf in Sheep’s Clothing: Spreading Deadly Pathogens Under the Disguise of Popular Music”

Research paper “A Wolf in Sheep’s Clothing: Spreading Deadly Pathogens Under the Disguise of Popular Music” by CECS affiliated graduate students Anomadarshi Barua and Yonatan Gizachew (left), guided by CECS affiliated Prof. Mohammad Abdullah Al Faruque (right), was accepted to the 2022 ACM Conference on Computer and Communications Security (CCS



2022). The researchers used malicious music to trick differential pressure sensors to reverse the negative pressure of a Negative Pressure Room, used by biolabs or infectious-control hospitals, causing a leakage of deadly microbes.



## Payam Heydari Named NAI Fellow

The National Academy of Inventors (NAI) has named CECS affiliated faculty Prof. Payam Heydari as a 2022 fellow for his ground-breaking research in the design of radio frequency, millimeter wave and terahertz integrated microchips. Prof. Heydari's work has transformed wireless communications infrastructure, scientific imaging and sensing and the interface of electronics with living tissues.

The NAI fellows program is the organization's highest professional distinction awarded solely to academic inventors. UCI now has 16 NAI fellows.



## Zhou Li Awarded \$300K for Internet Data Privacy Research



CECS affiliated Assistant Professor of electrical engineering and computer science Zhou Li is leading a research project in Foundations for Differentially Private Internet Measurement.

The project plans to study and assess privacy issues in existing practice, investigate how differential privacy can be adjusted and integrated, and develop methods to publish synthetic internet measurement data along with differential privacy. This effort is supported with \$300K over three years by the National Science Foundation.

## Swindlehurst Named TUM Ambassador

The Technical University of Munich (TUM) named CECS affiliated Professor A. Lee Swindlehurst a TUM Ambassador for his internationally cooperative efforts to "fuel innovation and enable progress in science." Prof. Swindlehurst researched in the application of detection and estimation theory in signal processing, biomedicine and wireless communication. He is one of 11 international TUM research alumni scholars who are credited with this title.



## Visitor Profile

### Visitor Profile: Junho Kim



Junho Kim is a professor of the College of Computer Science in Kookmin University, Korea. He earned the BS, MS, and PhD degrees in computer science and engineering from the Pohang University of Science and Technology (POSTECH) in 1998, 2000, and 2005, respectively. He was with Stony Brook University as a research associate from 2005 to 2008 and Victoria University of Wellington as a visiting professor from 2015 to 2016. In 2022, he is spending his sabbatical year in the University of California, Irvine (UCI) hosted by Nikil Dutt, Professor of Computer Science, Cognitive Sciences and EECS.

His research interests include computer graphics, computer vision, mixed reality, and deep learning. He has recently focused on providing neural geometric algorithms for 3D understanding from images, such as 3D-aware generative models and neural camera calibrations. He has been actively contributing to the computer graphics and vision community, with his research work published in IEEE Transactions on Visualization and Computer Graphics, Computer Graphics Forum, Computers & Graphics, Eurographics, International Conference on Computer Vision, European Conference on Computer Vision, and Asian Conference on Computer Vision. He is looking forward to research collaborations during his UCI visit.

## Charalambos Konstantinou - “Electric Power to the People: Secure & Resilient Cyber-Physical Systems in the Age of Renewable Energy”



**Title:** Electric Power to the People: Secure & Resilient Cyber-Physical Systems in the Age of Renewable Energy

**Speaker:** Charalambos Konstantinou, Assistant Professor of Computer Science, KAUST

**Date and Time:** Friday, July 15, 10:00 a.m.

**Location:** EH 2430

**Hosted By:** Prof. Mohammad Al Faruque

**Title:** Securing Hardware for Designing Trustworthy Systems

## Prabhat Mishra - “Securing Hardware for Designing Trustworthy Systems”

**Speaker:** Prabhat Mishra, Professor of Computer and Information Science and Engineering, UF Research Foundation Professor, University of Florida

**Date and Time:** Tuesday, August 2, 2:00 p.m.

**Location:** DBH 4011

**Hosted By:** Prof. Nikil Dutt



## Miquel Moreto - “DRAC: Designing RISC-V-based Accelerators for next generation Computers”



**Title:** DRAC: Designing RISC-V-based Accelerators for next generation Computers

**Speaker:** Miquel Moreto, Ramon y Cajal Fellow at UPC, Associate Researcher at BSC, Universitat Politècnica de Catalunya

**Date and Time:** Wednesday, August 10, 11:00 a.m.

**Location:** DBH 3011

**Hosted By:** Prof. Veidenbaum

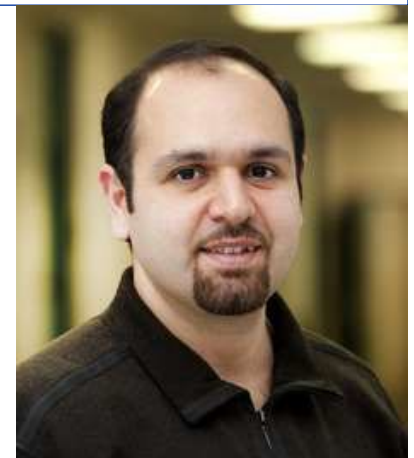
## Mehdi Tahoori - “Design Automation and Computing based on Additive Printed Electronics”

**Title:** Design Automation and Computing based on Additive Printed Electronics

**Speaker:** Mehdi Tahoori, Professor and Chair of Dependable Nano-Computing (CDNC) at Karlsruhe Institute of Technology

**Date and Time:** Thursday, September 29, 11:00 a.m.

**Location:** EH 2430



## Deming Chen - “ Programmability, Scalability, and Security for Reconfigurable Computing in the Cloud”



**Hosted by:** Prof. Bozorgzadeh

**Title:** Programmability, Scalability, and Security for Reconfigurable Computing in the Cloud

**Speaker:** Prof. Deming Chen, University of Illinois at Urbana-Champaign

**Date and Time:** Thursday, November 3rd, 3:00 pm

**Location:** EH 2430



# Publications

## Publications

The following papers were published by CECS affiliates from July 2022 through December 2022 (and unreported papers from previous eNews).

Author, Title, Publication	Conference Proceedings
Vikas Maurya, Nanda Rani, Sandeep Kumar Shukla:	<b>RemOD: Operational Drift-Adaptive Intrusion Detection.</b> SPACE 2022: 314-333, December 9-12, 2022, Jaipur, India
Xiaowu Sun, Yasser Shoukry:	<b>NNSynth: Neural Network Guided Abstraction-Based Controller Synthesis for Stochastic Systems.</b> CDC 2022: 2905-2910, December 6-9, 2022, Cancun, Mexico
Ulices Santa Cruz, James Ferlez, Yasser Shoukry:	<b>Safe-by-Repair: A Convex Optimization Approach for Repairing Unsafe Two-Level Lattice Neural Network Controllers.</b> CDC 2022: 3383-3388, December 6-9, 2022, Cancun, Mexico
Elahe Hosseini, Ruijie Fang, Ruoyu Zhang, Anna Parenteau, Sally Hang, Setareh Rafatirad, Camelia Hostinar, Mahdi Orooji, Houman Homayoun:	<b>A Low Cost EDA-based Stress Detection Using Machine Learning.</b> BIBM 2022: 2619-2623, December 6-8, 2022, Las Vegas, NV, USA
Ruijie Fang, Ruoyu Zhang, Elahe Hosseini, Anna M. Parenteau, Sally Hang, Setareh Rafatirad, Camelia E. Hostinar, Mahdi Orooji, Houman Homayoun:	<b>Towards Generalized ML Model in Automated Physiological Arousal Computing: A Transfer Learning-Based Domain Generalization Approach.</b> BIBM 2022: 2577-2584, December 6-8, 2022, Las Vegas, NV, USA
Ruijie Fang, Ruoyu Zhang, Elahe Hosseini, Anna M. Parenteau, Sally Hang, Setareh Rafatirad, Camelia E. Hostinar, Mahdi Orooji, Houman Homayoun:	<b>Prevent Over-fitting and Redundancy in Physiological Signal Analyses for Stress Detection.</b> BIBM 2022: 2585-2588, December 6-8, 2022, Las Vegas, NV, USA
Behnam Khaleghi, Tianqi Zhang, Cameron Martino, George Armstrong, Ameen Akel, Ken Curewitz, Justin Eno, Sean Eilert, Rob Knight, Niema Moshiri, Tajana Rosing:	<b>SALIENT: Ultra-Fast FPGA-based Short Read Alignment.</b> FPT 2022: 1-10, December 5-9, 2022, Hong Kong
Qifan Zhang, Junjie Shen, Mingtian Tan, Zhe Zhou, Zhou Li, Qi Alfred Chen, Haipeng Zhang:	<b>Play the Imitation Game: Model Extraction Attack against Autonomous Driving Localization.</b> ACSAC 2022: 56-70, December 5-9, 2022, Austin, TX, USA
Anomadarshi Barua, Lelin Pan, Mohammad Abdullah Al Faruque:	<b>BayesImposter: Bayesian Estimation Based.bss Imposter Attack on Industrial Control Systems.</b> ACSAC 2022: 440-454, December 5-9, 2022, Austin, TX, USA
Mingoo Ji, Saehanseul Yi, Changjin Koo, Sol Ahn, Dongjoo Seo, Nikil D. Dutt, Jong-Chan Kim:	<b>Demand Layering for Real-Time DNN Inference with Minimized Memory Usage.</b> RTSS 2022: 291-304, December 5-8, 2022, Houston, TX, USA
Isabela Figueira, Muhammad Twaha Ibrahim, Aditi Majumder, M. Gopi:	<b>Augmented Reality Patient-Specific Registration for Medical Visualization.</b> VRST 2022: 43:1-43:2, November 29 -December 1, 2022, Tsukuba, Japan
Mohammad Abdullah Al Faruque:	<b>Cross-Layer Security of Embedded and Cyber-Physical Systems.</b> AMSec@CCS 2022: 39-40, November 11, 2022, Los Angeles, CA, USA
Ramtin Afshar, Michael T. Goodrich:	<b>Exact Learning of Multitrees and Almost-Trees Using Path Queries.</b> LATIN 2022: 293-311, November 7-11, 2022, Guanajuato, Mexico



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The following papers were published by CECS affiliates from July 2022 through December 2022 (and unreported papers from previous eNews).

### Author, Title, Publication

### Conference Proceedings

Yunpeng Luo, Ziwen Wan, Qi Alfred Chen: **Poster: Towards Complete Computation Graph Generation for Security Assessment of ROS Applications.** CCS 2022: 3411-3413, November 7-11, 2022, Los Angeles, CA, USA

Takami Sato, Yuki Hayakawa, Ryo Suzuki, Yohsuke Shiiki, Kentaro Yoshioka, Qi Alfred Chen: **Poster: Towards Large-Scale Measurement Study on LiDAR Spoofing Attacks against Object Detection.** CCS 2022: 3459-3461, November 7-11, 2022, Los Angeles, CA, USA

Ningfei Wang, Yunpeng Luo, Takami Sato, Kaidi Xu, Qi Alfred Chen: **Poster: On the System-Level Effectiveness of Physical Object-Hiding Adversarial Attack in Autonomous Driving.** CCS 2022: 3479-3481, November 7-11, 2022, Los Angeles, CA, USA

Anomadarshi Barua, Yonatan Gizachew Achamyelch, Mohammad Abdullah Al Faruque: **A Wolf in Sheep's Clothing: Spreading Deadly Pathogens Under the Disguise of Popular Music.** CCS 2022: 277-291, November 7-11, 2022, Los Angeles, CA, USA

Shuheng Li, Jingbo Shang, Rajesh K. Gupta, Dezhi Hong: **SQEE: A Machine Perception Approach to Sensing Quality Evaluation at the Edge by Uncertainty Quantification.** SenSys 2022: 277-290, November 6-9, 2022, Boston, MA, USA

Michael T. Goodrich, Evrim Ozel: **Modeling the small-world phenomenon with road networks.** SIGSPATIAL/GIS 2022: 46:1-46:10, November 1-4, 2022, Seattle, WA, USA

Ivan De Oliveira Nunes, Sashidhar Jakkamsetti, Youngil Kim, Gene Tsudik: **CASU: Compromise Avoidance via Secure Update for Low-End Embedded Systems.** ICCAD 2022: 146:1-146:9, October 30-November 3, 2022, San Diego, CA, USA

Onat Güngör, Tajana Rosing, Baris Aksanli: **DENSE-DEFENSE: Diversity Promoting Ensemble Adversarial Training Towards Effective Defense.** IEEE SENSORS 2022: 1-4, October 30-November 2, 2022, Dallas, TX, USA

Ebadollah Taheri, Sudeep Pasricha, Mahdi Nikdast: **ReSiPI: A Reconfigurable Silicon-Photonic 2.5D Chiplet Network with PCMs for Energy-Efficient Interposer Communication.** ICCAD 2022: 24:1-24:9, October 30-November 3, 2022, San Diego, CA, USA

Luke Chen, Mohanad Odema, Mohammad Abdullah Al Faruque: **Romanus: Robust Task Offloading in Modular Multi-Sensor Autonomous Driving Systems.** ICCAD 2022: 162:1-162:8, October 30-November 3, 2022, San Diego, CA, USA

Anomadarshi Barua, Mohammad Abdullah Al Faruque: **Sensor Security: Current Progress, Research Challenges, and Future Roadmap (Invited Paper).** ICCAD 2022: 12:1-12:7, October 30-November 3, 2022, San Diego, CA, USA

Che-Kai Liu, Haobang Chen, Mohsen Imani, Kai Ni, Arman Kazemi, Ann Franchesca Laguna, Michael T. Niemier, Xiaobo Sharon Hu, Liang Zhao, Cheng Zhuo, Xunzhao Yin: **COSIME: FeFET Based Associative Memory for In-Memory Cosine Similarity Search.** ICCAD 2022: 137:1-137:9, October 30-November 3, 2022, San Diego, CA, USA

Hanning Chen, Mariam Issa, Yang Ni, Mohsen Imani: **DARL: Distributed Reconfigurable Accelerator for Hyperdimensional Reinforcement Learning.** ICCAD 2022: 84:1-84:9, October 30-November 3, 2022, San Diego, CA, USA

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- | Author, Title, Publication   | Conference Proceedings |
|--|------------------------|
| Yang Ni, Nicholas A. Lesica, Fan-Gang Zeng, Mohsen Imani: <b>Neurally-Inspired Hyperdimensional Classification for Efficient and Robust Biosignal Processing</b> . ICCAD 2022: 34:1-34:9, October 30-November 3, 2022, San Diego, CA, USA  |                        |
| Sizhe Zhang, Mohsen Imani, Xun Jiao: <b>ScaleHD: Robust Brain-Inspired Hyperdimensional Computing via Adaptive Scaling</b> . ICCAD 2022: 31:1-31:9, October 30-November 3, 2022, San Diego, CA, USA  |                        |
| Anomadarshi Barua, Mohammad Abdullah Al Faruque: <b>HALC: A Real-time In-sensor Defense against the Magnetic Spoofing Attack on Hall Sensors</b> . RAID 2022: 185-199, October 26-28, 2022, Limassol, Cyprus   |                        |
| Hsin-Wei Hung, Yingtong Liu, Ardalan Amiri Sani: <b>Sifter: protecting security-critical kernel modules in Android through attack surface reduction</b> . MobiCom 2022: 623-635, October 17-21, 2022, Sydney, Australia  |                        |
| Quanling Zhao, Kai Lee, Jeffrey Liu, Muhammad Huzaifa, Xiaofan Yu, Tajana Rosing: <b>FedHD: federated learning with hyperdimensional computing</b> . MobiCom 2022: 791-793, October 17-21, 2022, Sydney, Australia   |                        |
| Peeyush Gupta, Sharad Mehrotra, Shantanu Sharma, Roberto Yus, Nalini Venkatasubramanian: <b>Sentaur: Sensor Observable Data Model for Smart Spaces</b> . CIKM 2022: 3131-3140, October 17-21, 2022, Atlanta, GA, USA   |                        |
| Behnam Khaleghi, Tianqi Zhang, Niya Shao, Ameen Akel, Ken Curewitz, Justin Eno, Sean Eilert, Niema Moshiri, Tajana Rosing: <b>FAST: FPGA-based Acceleration of Genomic Sequence Trimming</b> . BioCAS 2022: 510-514, October 13-15, 2022, Taipei, Taiwan   |                        |
| Jaeyoung Kang, Weihong Xu, Wout Bittremieux, Tajana Rosing: <b>Massively Parallel Open Modification Spectral Library Searching with Hyperdimensional Computing</b> . PACT 2022: 536-537, October 8-12, 2022, Chicago, IL, USA  |                        |
| Shaoshan Liu, Xiaoming Li, Tongsheng Geng, Stéphane Zuckerman, Jean-Luc Gaudiot: <b>Programming Autonomous Machines: Special Session Paper</b> . EMSOFT 2022: 24-33, October 7-14, 2022, Shanghai, China   |                        |
| Hussam Amrouch, Mohsen Imani, Xun Jiao, Yiannis Aloimonos, Cornelia Fermüller, Dehao Yuan, Dongning Ma, Hamza Errahmouni Barkam, Paul R. Genssler, Peter Sutor Jr.: <b>Brain-Inspired Hyperdimensional Computing for Ultra-Efficient Edge AI</b> . CODES+ISSS 2022: 25-34, October 7-14, 2022, Shanghai, China |                        |
| Dongjoo Seo, Biswadip Maity, Ping-Xiang Chen, Dukyoung Yun, Bryan Donyanavard, Nikil D. Dutt: <b>ProSwap: Period-aware Proactive Swapping to Maximize Embedded Application Performance</b> . NAS 2022: 1-4, October 3-4, 2022, Philadelphia, PA, USA   |                        |
| Sonali Singh, Anup Sarma, Sen Lu, Abhronil Sengupta, Mahmut T. Kandemir, Emre Neftci, Vijaykrishnan Narayanan, Chita R. Das: <b>Skipper: Enabling efficient SNN training through activation-checkpointing and time-skipping</b> . MICRO 2022: 565-581, October 1-5, 2022, Chicago, IL, USA                     |                        |
| Samira Mirbagher Ajorpaz, Daniel Moghimi, Jeffrey Neal Collins, Gilles Pokam, Nael B. Abu-Ghazaleh, Dean M. Tullsen: <b>EVAX: Towards a Practical, Pro-active &amp; Adaptive Architecture for High Performance &amp; Security</b> . MICRO 2022: 1218-1236, October 1-5, 2022, Chicago, IL, USA                 |                        |

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| Qi Huang, Waseem Alkhayer, Mohammed E. Fouda, Abdulkadir Celik, Ahmed M. Eltawil: <b>Wearable Vital Signal Monitoring Prototype Based on Capacitive Body Channel Communication.</b> BSN 2022: 1-5, September 27-30, 2022, Ioannina, Greece                                   |                        |
| Kiran S. Balagani, Matteo Cardaioli, Stefano Cecconello, Mauro Conti, Gene Tsudik: <b>We Can Hear Your PIN Drop: An Acoustic Side-Channel Attack on ATM PIN Pads.</b> ESORICS (1) 2022: 633-652, September 26-30, 2022, Copenhagen, Denmark                                  |                        |
| Mohd Hamza Naim Shaikh, Sultangali Arzykulov, Abdulkadir Celik, Ahmed M. Eltawil, Galymzhan Nauryzbayev: <b>Performance of RIS-empowered NOMA-based D2D Communication under Nakagami-m Fading.</b> VTC Fall 2022: 1-5, September 26-29, 2022, London, United Kingdom         |                        |
| Songwen Pei, Jianan Li, Yihuan Qian, Jie Tang, Jean-Luc Gaudiot: <b>TransMigrator: A Transformer-Based Predictive Page Migration Mechanism for Heterogeneous Memory.</b> NPC 2022: 180-191, September 24-25, 2022, Jinan, China  |                        |
| Jeffrey L. Krichmar, Nicholas A. Ketz, Praveen K. Pilly, Andrea Soltoggio: <b>Flexible Path Planning in a Spiking Model of Replay and Vicarious Trial and Error.</b> SAB 2022: 177-189, September 20-23, 2022, Cergy-Pontoise, France  |                        |
| Jinwei Xing, Xinyun Zou, Praveen K. Pilly, Nicholas A. Ketz, Jeffrey L. Krichmar: <b>Adapting to Environment Changes Through Neuromodulation of Reinforcement Learning.</b> SAB 2022: 115-126, September 20-23, 2022, Cergy-Pontoise, France                                 |                        |
| Charles Steinmetz, Greyce N. Schroeder, Adam Sulak, Kaan Tuna, Alecio Binotto, Achim Rettberg, Carlos Eduardo Pereira: <b>A methodology for creating semantic digital twin models supported by knowledge graphs.</b> ETFA 2022: 1-7, September 6-9, 2022, Stuttgart, Germany |                        |
| Friederike Bruns, Wolfgang Nebel, Jörg Walter: <b>A Detailed Analysis of Timing Effects in an IEC 61499 Ethernet/TSN Communication Scenario.</b> ETFA 2022: 1-8, September 6-9, 2022, Stuttgart, Germany   |                        |
| Liping Wang, Sudeep Pasricha: <b>A Framework for CSI-Based Indoor Localization with ID Convolutional Neural Networks.</b> IPIN 2022: 1-8, September 5-8, 2022, Beijing, China  |                        |
| Saideep Tiku, Danish Gufran, Sudeep Pasricha: <b>Multi-Head Attention Neural Network for Smartphone Invariant Indoor Localization.</b> IPIN 2022: 1-8, September 5-8, 2022, Beijing, China   |                        |
| Venkatesan Subramanian, Sandeep Kumar Shukla, Yuvaraj Rajendra: <b>TrustSim: A Decentralized Reputation and Trust Model Simulator.</b> BCCA 2022: 181-188, September 5-7, 2022, San Antonio, TX, USA   |                        |
| Rohit Kumar Sachan, Rachit Agarwal, Sandeep Kumar Shukla: <b>DNS based In-Browser Cryptojacking Detection.</b> BCCA 2022: 259-266, September 5-7, 2022, San Antonio, TX, USA   |                        |
| Joydeep Dey, Sudeep Pasricha: <b>Co-Optimizing Sensing and Deep Machine Learning in Automotive Cyber-Physical Systems.</b> DSD 2022: 308-315, August 31 - September 2, 2022, Maspalomas, Spain   |                        |
| Venkatesan Subramanian, Sandeep Kumar Shukla, Yuvaraj Rajendra: <b>TrustSim: A Decentralized Reputation and Trust Model Simulator.</b> BCCA 2022: 181-188, September 5-7, 2022, San Antonio, TX, USA   |                        |



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- Liping Wang, Sudeep Pasricha: **A Framework for CSI-Based Indoor Localization with ID Convolutional Neural Networks**. IPIN 2022: 1-8, September 5-8, 2022, Beijing, China
- Saideep Tiku, Danish Gufran, Sudeep Pasricha: **Multi-Head Attention Neural Network for Smartphone Invariant Indoor Localization**. IPIN 2022: 1-8, September 5-8, 2022, Beijing, China
- Friederike Bruns, Wolfgang Nebel, Jörg Walter: **A Detailed Analysis of Timing Effects in an IEC 61499 Ethernet/TSN Communication Scenario**. ETFA 2022: 1-8, September 6-9, 2022, Stuttgart, Germany
- Charles Steinmetz, Greyce N. Schroeder, Adam Sulak, Kaan Tuna, Alecio Binotto, Achim Rettberg, Carlos Eduardo Pereira: **A methodology for creating semantic digital twin models supported by knowledge graphs**. ETFA 2022: 1-7, September 6-9, 2022, Stuttgart, Germany
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- Jinwei Xing, Xinyun Zou, Praveen K. Pilly, Nicholas A. Ketz, Jeffrey L. Krichmar: **Adapting to Environment Changes Through Neuromodulation of Reinforcement Learning**. SAB 2022: 115-126, September 20–23, 2022, Cergy-Pontoise, France
- Songwen Pei, Jianan Li, Yihuan Qian, Jie Tang, Jean-Luc Gaudiot: **TransMigrator: A Transformer-Based Predictive Page Migration Mechanism for Heterogeneous Memory**. NPC 2022: 180-191, September 24-25, 2022, Jinan, China
- Mohd Hamza Naim Shaikh, Sultangali Arzykulov, Abdulkadir Celik, Ahmed M. Eltawil, Galymzhan Nauryzbayev: **Performance of RIS-empowered NOMA-based D2D Communication under Nakagami-m Fading**. VTC Fall 2022: 1-5, September 26-29, 2022, London, United Kingdom
- Kiran S. Balagani, Matteo Cardaioli, Stefano Cecconello, Mauro Conti, Gene Tsudik: **We Can Hear Your PIN Drop: An Acoustic Side-Channel Attack on ATM PIN Pads**. ESORICS (1) 2022: 633-652, September 26-30, 2022, Copenhagen, Denmark
- Qi Huang, Waseem Alkhayer, Mohammed E. Fouda, Abdulkadir Celik, Ahmed M. Eltawil: **Wearable Vital Signal Monitoring Prototype Based on Capacitive Body Channel Communication**. BSN 2022: 1-5, September 27-30, 2022, Ioannina, Greece
- Samira Mirbagher Ajorpaz, Daniel Moghimi, Jeffrey Neal Collins, Gilles Pokam, Nael B. Abu-Ghazaleh, Dean M. Tullsen: **EVAX: Towards a Practical, Pro-active & Adaptive Architecture for High Performance & Security**. MICRO 2022: 1218-1236, October 1-5, 2022, Chicago, IL, USA
- Halima Bouzidi, Hamza Ouarnoughi, Smaïl Niar, El-Ghazali Talbi, Abdessamad Ait El Cadi: **Co-Optimization of DNN and Hardware Configurations on Edge GPUs**. DSD 2022: 398-405, August 31 - September 2, 2022, Maspalomas, Spain

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The following papers were published by CECS affiliates from July 2022 through December 2022 (and unreported papers from previous eNews).

Author, Title, Publication	Conference Proceedings
Hadjer Benmeziane, Hamza Ouranoughi, Smaïl Niar, Kaoutar El Maghraoui: <b>CaW-NAS: Compression Aware Neural Architecture Search</b> . DSD 2022: 391-397, August 31 - September 2, 2022, Maspalomas, Spain	
Joydeep Dey, Sudeep Pasricha: <b>Co-Optimizing Sensing and Deep Machine Learning in Automotive Cyber-Physical Systems</b> . DSD 2022: 308-315, August 31 - September 2, 2022, Maspalomas, Spain	
Rang Liu, Ming Li, A. Lee Swindlehurst: <b>Joint Beamforming and Reflection Design for RIS-assisted ISAC Systems</b> . EU-SIPCO 2022: 997-1001, August 29 - September 2, 2022, Belgrade, Serbia	
Gill Barequet, Shion Fukuzawa, Michael T. Goodrich, David M. Mount, Martha C. Osegueda, Evrim Ozel: <b>Optimally Confining Lattice Polymers</b> . CCCG 2022: 24-15, August 25-27, 2022, Toronto, Canada	
Ye Qiao, Mohammed Alnemari, Nader Bagherzadeh: <b>A Two-Stage Efficient 3-D CNN Framework for EEG Based Emotion Recognition</b> . ICIT 2022: 1-8, August 22-25, 2022, Shanghai, China	
Jinhao Liu, Xiaofan Yu, Tajana Rosing: <b>Self-Train: Self-Supervised On-Device Training for Post-Deployment Adaptation</b> . SmartIoT 2022: 161-168, August 19-21, 2022, Suzhou, China	
Ranak Roy Chowdhury, Xiyuan Zhang, Jingbo Shang, Rajesh K. Gupta, Dezhi Hong: <b>TARNet: Task-Aware Reconstruction for Time-Series Transformer</b> . KDD 2022: 212-220, August 14-18, 2022, Washington DC USA	
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