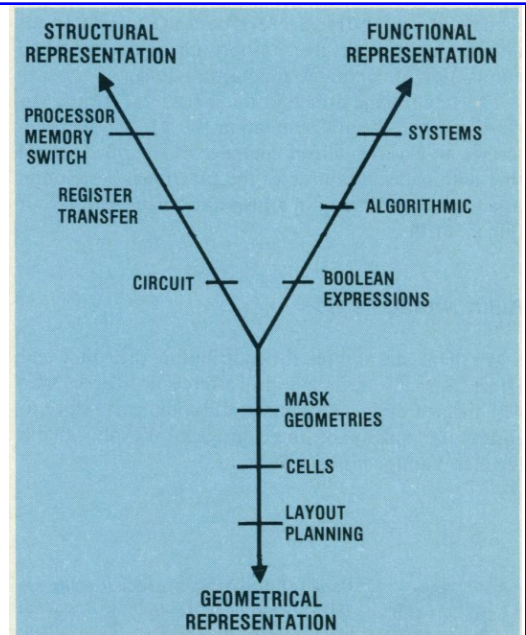
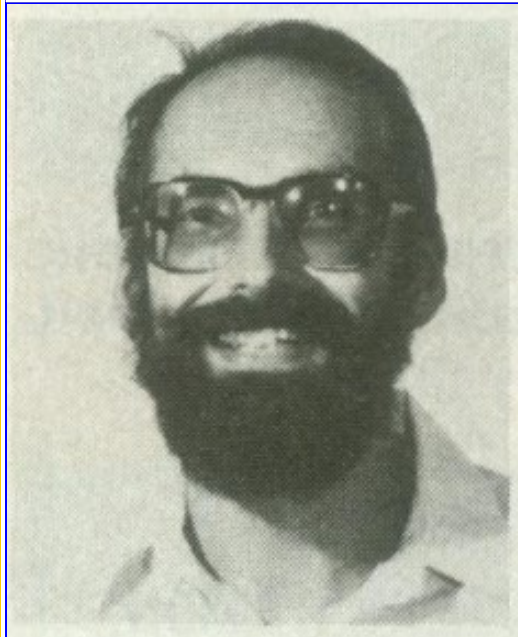




### Inside this Issue:

- Legacy of Gajski-Kuhn Y-Chart
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## Legacy of Gajski-Kuhn Y-Chart



In December of 1983, CECS Founding Director and Professor Daniel Gajski was the editor of a special issue of IEEE Computer on "New VLSI Tools". In the "Guest Editor Introduction" he and co-editor Robert Kuhn introduced Gajski-Kuhn Y-Chart which became a popular in presenting and explaining the design strategies and tools. Y-Chart allows designers and tool creators to better visualize design hierarchies and design strategies by using the three branches: behavioral/functional, structural, and physical/geometric representation and several layers of granularity. The basic three views form the Y shape and thus created the name of Y-Chart.

The Y-Chart is widely used for design of computer components and developing design strategies and tools. Since 1983, Prof. Gajski's introduction on Y-Chart has been cited over 46,000 times, and even now in 2024. It is frequently used at university's courses and companies making design and tools for computer components. We would like to highlight how his work has transcended through time and spearheaded the way of business and use of different strategies for computer based system design all over the world.

## MECPS Symposium 2023



On Friday December 9, 2023, MECPS hosted the annual end-of-year symposium to showcase the capstone projects of the MECPS graduating students as well as projects from the first year cohort. This year, three teams tied for second and one team won first place for the Best Project Award.

### First Place Winner:

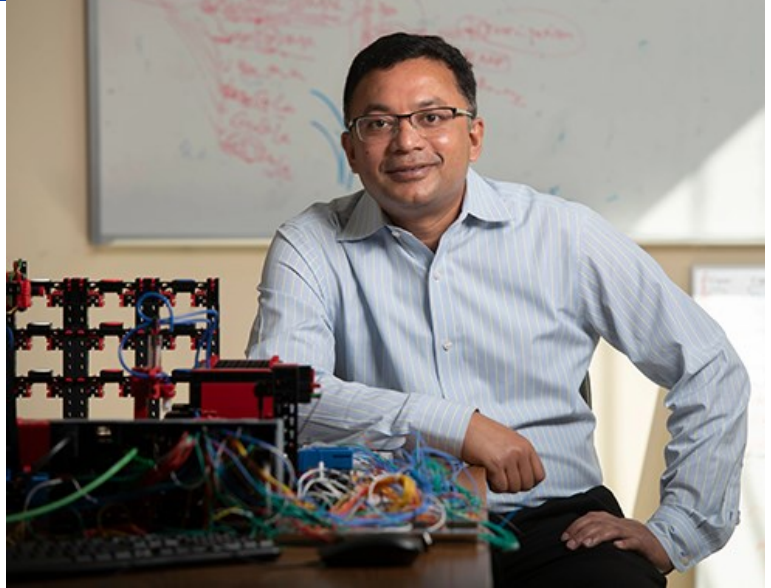
- Brain Padilla, Gabriel Rizko, and Andre Alain Tabourian - “Power, Communication, and Control using NFC and WPT”

### Second Place Winners:

- Jeet Shah, Rushabh Patel, and Vandit Patel - “Autonomous UAV swarm for Extensive Surveillance”
- Jan Wojtkowski and Joe Huang - “AR Assistant”
- Arjun Sivakumar, Bhumi Depani, and Ricky Bevan - “AGNI—Autonomous Ground Navigation Initiative”

## AI Faruque Awarded 378K for Autonomous Vehicle Project

CECS affiliated Professor of Electrical Engineering and Computer Science Mohammad Al Faruque received \$378K in award over three years for his project “Adaptive and Efficient Perception for Autonomous Ground Vehicle Operating in Highly Stochastic Environments under Sensing Uncertainties”. With the funding from the U.S. Army Automotive Research Center, Prof. Al Faruque and his team will study the computational constraints and sensor fusion methods to better military autonomous vehicle on uncertain roads.



## Jun’s Paper Appears on 25-year Retrospective Edition of ISCA’23



Sang-Woo Jun, CECS affiliated Professor of Computer Science, explores the possibility of improving system efficient without sacrificing performance in his co-authored paper “GraFBoost: Using Accelerated Flash Storage for External Graph Analytics.” His paper from five years ago explained that using a solid-state drive instead of dynamic RAM for I/O intensive graph analytics can cut cost and power usage by four fold without significant loss of performance.

For his extraordinary discovery, Prof. Jun’s work was selected as one of the 98 papers to appear on the 25-year retrospective edition of the International Symposium on Computer Architecture (ISCA 2023).

## Shoukry's UAM Project Awarded 2M



CECS affiliated Associate Professor of Electrical Engineering and Computer Science Yasser Shoukry and team were awarded \$2 million over four years by the Smart and Connected Communities and the National Science Foundation for their project “Community-Driven Design of Fair Urban Air Mobility Transportation Management Systems.” Prof. Shoukry and team will investigate and design durable Urban Air Mobility (UAM) infrastructures to help traffic congestion that will not discriminate or reinforce socioeconomic inequality.

## Dang Won Excellence in Digital Learning

Quoc-Viet Dang, CECS affiliated Assistant Professor of Electrical Engineering and Computer Science, was honored with Excellence in Digital Learning at UCI Teach Day and the 31st Annual Celebration of Teaching. Prof. Dang proves to be an exceptional teacher with his usage in teaching technology and digital course engagement. He incorporated a single case study across multiple courses, which allows students to build on top of pre-existing knowledge and continue their investigation.



## Imani Received Young Investigator Award



The Office of Naval Research (ONR) awarded CECS affiliated Assistant Professor in Computer Science Mohsen Imani with the Young Investigator Award. Prof. Imani, who also was also honored with Defense Advanced Research Projects Agency's Young Faculty Award, is a pioneer in research on hyper-dimensional computing as a neuro-symbolic AI technique. Him and his lab investigate the intersection of neuroscience, AI, and embedded systems. With this award, Prof. Imani will also receive a fund of &750K over three years for his brilliant effort.

## CECS Seminar Series

### Achim Rettberg - “Requirements and Applications of Cloud-based Services within the Automotive Edge”



**Title:** Requirements and Applications of Cloud-based Services within the Automotive Edge

**Speaker:** Achim Rettberg, Professor for Human Machine Interface Technologies at the University of Applied Science Hamm-Lippstadt

**Date and Time:** Friday, July 14, 10:00 a.m.

**Location:** EH 2430

**Hosted By:** Prof. Dutt

### Charles Steinmetz - “An Intergraded Environment for Modeling and Deploying Digital Twins”

**Title:** An Intergraded Environment for Modeling and Deploying Digital Twins

**Speaker:** Charles Steinmetz, Ph.D. Student at the University of Oldenburg and Research Assistant at the University of Applied Science Hamm-Lippstadt

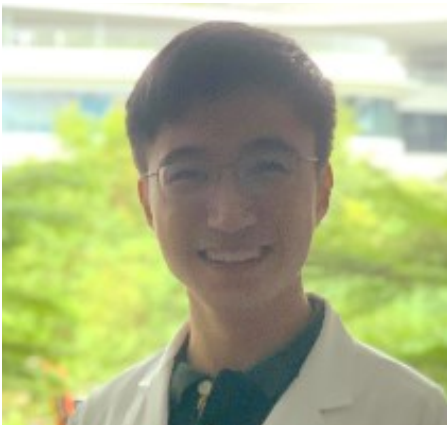
**Date and Time:** Friday, July 14, 11:00 a.m.

**Location:** EH 2430

**Hosted by:** Prof. Dutt



### Jason Yu - “Capstone: A Capability-based Foundation for Trustless Secure Memory Access”



**Title:** Capstone: A Capability-based Foundation for Trustless Secure Memory Access

**Speaker:** Jason Yu, Fourth-year Ph.D. Student at the School of Computing, National University of Singapore

**Date and Time:** Monday, August 7, 11:00 a.m.

**Location:** EH 2430

**Hosted By:** Prof. Li

## CECS Seminar Series

### Francky Catthoor - “Pareto Exploration Methodology for Future Logic Technology Options in Domain-Specific Processors”

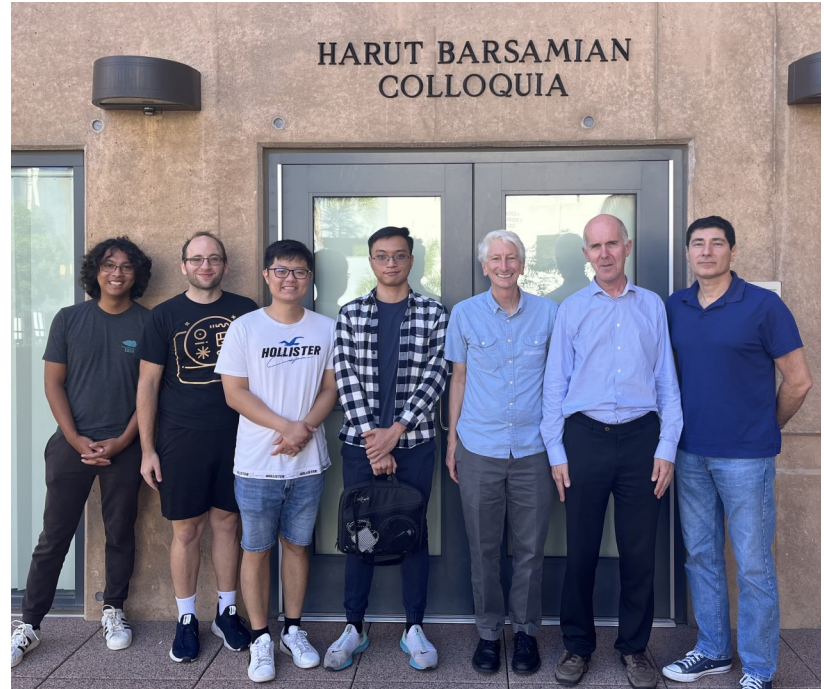
**Title:** Pareto Exploration Methodology for Future Logic Technology Options in Domain-Specific Processors

**Speaker:** Dr. Francky Catthoor, IMEC Fellow, Professor in the Department of Electrical Engineering at KU Leuven

**Date and Time:** Tuesday, September 26, 2:00 p.m.

**Location:** EH 2430

**Hosted by:** Prof. Dutt and Prof. Krichmar



### Gustavo Quiros - ECPS 209 Seminar Series: Industrial Automation CPS



**Title:** ECPS 209 Seminar Series: Industrial Automation CPS

**Speaker:** Dr. Gustavo Quiros, Research and Technology Manager at Siemens Technology

**Date and Time:** Mondays and Wednesdays of October 2, 4, 9, 11, 16, 18, 2:00 p.m.

**Location:** SSPA 1165

**Hosted By:** Prof. Huang

## CECS Seminar Series

### Yuhao Zhu - “Human-Centered Visual Computing: Harnessing Symbiosis Between Computer Architecture, Imaging, and Biological Perception”



**Title:** Human-Centered Visual Computing: Harnessing Symbiosis Between Computer Architecture, Imaging, and Biological Perception

**Speaker:** Dr. Yuhao Zhu, Assistant Professor in the Department of Computer Science at the University of Rochester

**Date and Time:** Thursday, October 12, 11:00 a.m.

**Location:** EH 2430

**Hosted By:** Prof. Kwon

### Judit Giró Benet - “Three Things I Learned Turning My Side Hustle into a FemTech Startup”

**Title:** Three Things I Learned Turning My Side Hustle into a FemTech Startup

**Speaker:** Judit Giró Benet, Co-Founder and CEO of The Blue Box

**Date and Time:** Monday, October 30, 9:30 a.m.

**Location:** SSTR 100

**Hosted By:** Prof. Kurdahi



## CECS Seminar Series

### Guohao Dai - “Sparse Computing and large Language Model: from AI 1.0 to AI 2.0”

**Title:** Sparse Computing and large Language Model: from AI 1.0 to AI 2.0

**Speaker:** Guohao Dai, Associate Professor at Shanghai Jiao Tong University

**Date and Time:** Friday, November 3, 10:30 p.m.

**Location:** ISEB 4020

**Hosted by:** Prof. Huang



### Imtiaz Karim - “Systematic Security Analysis of Cellular Network Specifications and Implementations”



**Title:** Systematic Security Analysis of Cellular Network Specifications and Implementations

**Speaker:** Dr. Imtiaz Karim, Postdoctoral Research Associate in the Department of Computer Science at Purdue University

**Date and Time:** Thursday, December 7, 2:30 p.m.

**Location:** EH 2430

**Hosted By:** Prof. Li



# Publications

## Publications

The following papers were published by CECS affiliates from July 2023 through December 2023 (and unreported papers from previous eNews).

Author, Title, Publication	Conference Proceedings
Yurun Song, Junchen Zhao, Spencer Koehler, Amir Abdullah, Ian G. Harris: <b>PC MID: Multi-Intent Detection through Supervised Prototypical Contrastive Learning</b> . EMNLP (Findings) 2023: 9481-9495, December 6-10, 2023, Singapore, Singapore	
Weixiao Zhou, Gengyao Li, Xianfu Cheng, Xinnian Liang, Junnan Zhu, Feifei Zhai, Zhoujun Li: <b>Multi-Stage Pre-training Enhanced by ChatGPT for Multi-Scenario Multi-Domain Dialogue Summarization</b> . EMNLP (Findings) 2023: 6893-6908, December 6-10, 2023, Singapore, Singapore	
Junyao Wang, Luke Chen, Mohammad Abdullah Al Faruque: <b>DOMINO: Domain-Invariant Hyperdimensional Classification for Multi-Sensor Time Series Data</b> . ICCAD 2023: 1-9, October 28 – November 2, 2023, San Francisco, CA, USA	
Hamza Errahmouni Barkam, Sanggeon Yun, Hanning Chen, Paul Gensler, Albi Mema, Andrew Ding, George Michelogiannakis, Hussam Amrouch, Mohsen Imani: <b>Reliable Hyperdimensional Reasoning on Unreliable Emerging Technologies</b> . ICCAD 2023: 1-9, October 28 – November 2, 2023, San Francisco, CA, USA	
Yang Ni, Hanning Chen, Prathyush Poduval, Zhuowen Zou, Pietro Mercati, Mohsen Imani: <b>Brain-Inspired Trustworthy Hyperdimensional Computing with Efficient Uncertainty Quantification</b> . ICCAD 2023: 1-9, October 28 – November 2, 2023, San Francisco, CA, USA	
Shengxi Shou, Che-Kai Liu, Sanggeon Yun, Zishen Wan, Kai Ni, Mohsen Imani, X. Sharon Hu, Jianyi Yang, Cheng Zhuo, Xunzhao Yin: <b>SEE-MCAM: Scalable Multi-Bit FeFET Content Addressable Memories for Energy Efficient Associative Search</b> . ICCAD 2023: 1-9, October 28 – November 2, 2023, San Francisco, CA, USA	
Hamza Errahmouni Barkam, SungHeon Eavn Jeon, Sanggeon Yun, Calvin Yeung, Zhuowen Zou, Xun Jiao, Narayan Srinivasa, Mohsen Imani: <b>Invited Paper: Hyperdimensional Computing for Resilient Edge Learning</b> . ICCAD 2023: 1-8, October 28 - November 2, 2023, San Francisco, CA, USA	
Jiyoung An, Esmerald Aliaj, Sang-Woo Jun: <b>Barad-dur: Near-Storage Accelerator for Training Large Graph Neural Networks</b> . PACT 2023: 225-237, October 21-25, 2023, Vienna, Austria	
Jiaqi Bai, Hongcheng Guo, Jiaheng Liu, Jian Yang, Xinnian Liang, Zhao Yan, Zhoujun Li: <b>GripRank: Bridging the Gap between Retrieval and Generation via the Generative Knowledge Improved Passage Ranking</b> . CIKM 2023: 36-46, October 21-25, 2023, Birmingham, United Kingdom	
Hanning Chen, Yeseong Kim, Elaheh Sadredini, Saransh Gupta, Hugo Latapie, Mohsen Imani: <b>Sparsity Controllable Hyperdimensional Computing for Genome Sequence Matching Acceleration</b> . VLSI-SoC 2023: 1-6, October 16-18, 2023, Dubai, United Arab Emirates	
Walaa Amer, Mariam Rakka, Rachid Karami, Minjun Seo, Mazen A. R. Saghir, Rouwaida Kanj, Fadi J. Kurdahi: <b>Hardware Implementation and Evaluation of an Information Processing Factory</b> . VLSI-SoC 2023: 1-6, October 16-18, 2023, Dubai, United Arab Emirates	
Foroozan Karimzadeh, Mohsen Imani, Bahar Asgari, Ningyuan Cao, Yingyan Lin, Yan Fang: <b>Memory-Based Computing for Energy-Efficient AI: Grand Challenges</b> . VLSI-SoC 2023: 1-8, October 16-18, 2023, Dubai, United Arab Emirates	

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The following papers were published by CECS affiliates from July 2023 through December 2023 (and unreported papers from previous eNews).

### Author, Title, Publication

### Conference Proceedings

Elahe Khatibi, Mahyar Abbasian, Iman Azimi, Sina Labbaf, Mohammad Feli, Jessica L. Borelli, Nikil D. Dutt, Amir M. Rahmani: **Impact of COVID-19 Pandemic on Sleep Including HRV and Physical Activity as Mediators: A Causal ML Approach**. BSN 2023: 1-4, October 9-11, 2023, Boston, MA, USA

Zhongqi Yang, Iman Azimi, Salar Jafarlou, Sina Labbaf, Jessica L. Borelli, Nikil D. Dutt, Amir M. Rahmani: **Loneliness Forecasting Using Multi-modal Wearable and Mobile Sensing in Everyday Settings**. BSN 2023: 1-4, October 9-11, 2023, Boston, MA, USA

Ruochen Jiao, Juyang Bai, Xiangguo Liu, Takami Sato, Xiaowei Yuan, Qi Alfred Chen, Qi Zhu: **Learning Representation for Anomaly Detection of Vehicle Trajectories**. IROS 2023: 9699-9706, October 1-5, 2023, Detroit, MI, USA

Junjie Shen, Yunpeng Luo, Ziwen Wan, Qi Alfred Chen: **Lateral-Direction Localization Attack in High-Level Autonomous Driving: Domain-Specific Defense Opportunity via Lane Detection**. IROS 2023: 9707-9713, October 1-5, 2023, Detroit, MI, USA

Tobias Fleck, Svetlana Pavlitska, Sven Nitzsche, Brian Pachideh, Federico Nicolás Peccia, Soikat Hasan Ahmed, Svea Marie Meyer, Mathis Richter, Kevin Broertjes, Emre Neftci, Jürgen Becker, Oliver Bringmann, J. Marius Zöllner: **Low-Power Traffic Surveillance using Multiple RGB and Event Cameras: A Survey**. ISC2 2023: 1-7, September 24-27, 2023, Bucharest, Romania

Davy P. Y. Wong, Pai H. Chou: **TongueMendous: IR-Based Tongue-Gesture Interface with Tiny Machine Learning**. iWOAR 2023: 4:1-4:8, September 21-22, 2023, Lübeck, Germany

Jiaqi Bai, Zhao Yan, Ze Yang, Jian Yang, Xinnian Liang, Hongcheng Guo, Zhoujun Li: **KnowPrefix-Tuning: A Two-Stage Prefix-Tuning Framework for Knowledge-Grounded Dialogue Generation**. ECML/PKDD (2) 2023: 525-542, September 18-22, 2023, Turin, Italy

Mohammad Abdullah Al Faruque, Muhammad Shafique: **Message from the Program Chair**. CODES+ISSS 2023: viii, September 17-22, 2023, Hamburg, Germany

Bryan Donyanavard, Nikil D. Dutt, Biswadip Maity, Parth Malani, Tiago Mück: **Tutorial: MARS: A Framework for Runtime Monitoring, Modeling, and Management of Realtime Systems**. CODES+ISSS 2023: 3-4, September 17-22, 2023, Hamburg, Germany

Vivek Govindasamy, Rainer Dömer: **Instruction-Level Modeling and Evaluation of a Cache-Less Grid of Processing Cells**. FDL 2023: 1-8, September 13-15, 2023, Turin, Italy

Liran Wang, Xunzhu Tang, Yichen He, Changyu Ren, Shuhua Shi, Chaoran Yan, Zhoujun Li: **Delving into Commit-Issue Correlation to Enhance Commit Message Generation Models**. ASE 2023: 710-722, September 11-15, 2023, Luxembourg, Luxembourg

Hanning Chen, Ali Zakeri, Fei Wen, Hamza Errahmouni Barkam, Mohsen Imani: **HyperGRAF: Hyperdimensional Graph-Based Reasoning Acceleration on FPGA**. FPL 2023: 34-41, September 4-8, 2023, Gothenburg, Sweden

Pere Vergés, Igor Nunes, Mike Heddes, Tony Givargis, Alexandru Nicolau: **Accelerating Permute and N-Gram Operations for Hyperdimensional Learning in Embedded Systems**. RTCSA 2023: 253-260, August 30 – September 1, 2023, Niigata, Japan

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The following papers were published by CECS affiliates from July 2023 through December 2023 (and unreported papers from previous eNews).

### Author, Title, Publication

### Conference Proceedings

- Yiyang Du, Shi-Wei Zhang, Xianjie Wu, Zhao Yan, Yunbo Cao, Zhoujun Li: **Read Then Respond: Multi-granularity Grounding Prediction for Knowledge-Grounded Dialogue Generation**. ADMA (2) 2023: 291-306, August 21-23, 2023, Shenyang, China
- Yang Ni, Yeseong Kim, Tajana Rosing, Mohsen Imani: **Algorithm-Hardware Co-Design for Efficient Brain-Inspired Hyperdimensional Learning on Edge (Extended Abstract)**. IJCAI 2023: 6474-6479, August 19-25, 2023, Macao, SAR, China
- Hui Peng, Zhihao Yao, Ardalan Amiri Sani, Dave Tian, Mathias Payer: **GLeeFuzz: Fuzzing WebGL Through Error Message Guided Mutation**. USENIX Security Symposium 2023: 1883-1899, August 9-11, 2023, Anaheim, CA, USA
- Xiang Li, Chaoyi Lu, Baojun Liu, Qifan Zhang, Zhou Li, Haixin Duan, Qi Li: **The Maginot Line: Attacking the Boundary of DNS Caching Protection**. USENIX Security Symposium 2023: 3153-3170, August 9-11, 2023, Anaheim, CA, USA
- Fan Yang, Jiachen Xu, Chunlin Xiong, Zhou Li, Kehuan Zhang: **PROGRAPHER: An Anomaly Detection System based on Provenance Graph Embedding**. USENIX Security Symposium 2023: 4355-4372, August 9-11, 2023, Anaheim, CA, USA
- Yifan Zhang, Arnav Vaibhav Malawade, Xiaofang Zhang, Yuhui Li, DongHwan Seong, Mohammad Abdullah Al Faruque, Sitao Huang: **CARMA: Context-Aware Runtime Reconfiguration for Energy-Efficient Sensor Fusion**. ISLPED 2023: 1-6, August 7-8, 2023, Vienna, Austria
- Igor Nunes, Mike Heddes, Pere Vergés, Danny Abraham, Alexander V. Veidenbaum, Alex Nicolau, Tony Givargis: **DotHash: Estimating Set Similarity Metrics for Link Prediction and Document Deduplication**. KDD 2023: 1758-1769, August 6-10, 2023, Long Beach, CA, USA
- Jamie Lohoff, Zhenming Yu, Jan Finkbeiner, Anil Kaya, Kenneth Michael Stewart, Hin Wai Lui, Emre Neftci: **Interfacing Neuromorphic Hardware with Machine Learning Frameworks - A Review**. ICONS 2023: 16:1-16:8, August 1-3, 2023, Santa Fe, NM, USA
- Esmerald Aliaj, Alberto Krone-Martins, Joshua Garcia, Sang-Woo Jun: **FarSlayer: Turnkey Acceleration of Legacy Software on Commodity FPGA Cards**. ASAP 2023: 172-179, July 19-21, 2023, Porto, Portugal
- Jiyoung An, Esmerald Aliaj, Sang-Woo Jun: **PreCog: Near-Storage Accelerator for Heterogeneous CNN Inference**. ASAP 2023: 45-52, July 19-21, 2023, Porto, Portugal
- Niloofer Bahadori, Yoshitomo Matsubara, Marco Levorato, Francesco Restuccia: **SplitBeam: Effective and Efficient Beamforming in Wi-Fi Networks Through Split Computing**. ICDCS 2023: 864-874, July 18-21, 2023, Hong Kong
- Mohsen Imani, Yeseong Kim, Behnam Khaleghi, Justin Morris, Haleh Alimohamadi, Farhad Imani, Hugo Latapie: **Hierarchical, Distributed and Brain-Inspired Learning for Internet of Things Systems**. ICDCS 2023: 511-522, July 18-21, 2023, Hong Kong
- Zhe Zhou, Yanxiang Bi, Junpeng Wan, Yangfan Zhou, Zhou Li: **Userspace Bypass: Accelerating Syscall-intensive Applications**. OSDI 2023: 33-49, July 10-12, 2023
- Bing Wang, Yan Gao, Zhoujun Li, Jian-Guang Lou: **Know What I don't Know: Handling Ambiguous and Unknown Questions for Text-to-SQL**. ACL (Findings) 2023: 5701-5714, July 9-14, 2023, Toronto, Canada

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- | Author, Title, Publication  | Conference Proceedings |
|---|------------------------|
| Yupeng Zhang, Shensi Wang, Peiguang Li, Guanting Dong, Sirui Wang, Yunsen Xian, Zhoujun Li, Hongzhi Zhang: <b>Pay Attention to Implicit Attribute Values: A Multi-modal Generative Framework for AVE Task.</b> ACL (Findings) 2023: 13139-13151, July 9-14, 2023, Toronto, Canada                             |                        |
| Mohanad Odema, James Ferlez, Yasser Shoukry, Mohammad Abdullah Al Faruque: <b>SEO: Safety-Aware Energy Optimization Framework for Multi-Sensor Neural Controllers at the Edge.</b> DAC 2023: 1-6, July 9-13, 2023, San Francisco, CA, USA   |                        |
| Jingyao Zhang, Mohsen Imani, Elaheh Sadredini: <b>BP-NTT: Fast and Compact in-SRAM Number Theoretic Transform with Bit-Parallel Modular Multiplication.</b> DAC 2023: 1-6, July 9-13, 2023, San Francisco, CA, USA  |                        |
| Halima Bouzidi, Mohanad Odema, Hamza Ouarnoughi, Smaïl Niar, Mohammad Abdullah Al Faruque: <b>Map-and-Conquer: Energy-Efficient Mapping of Dynamic Neural Nets onto Heterogeneous MPSoCs.</b> DAC 2023: 1-6, July 9-13, 2023, San Francisco, CA, USA  |                        |
| Nikil D. Dutt, Bryan Donyanavard: <b>Lightning Talk: The New Era of Computational Cognitive Intelligence.</b> DAC 2023: 1-2, July 9-13, 2023, San Francisco, CA, USA  |                        |
| Igor Nunes, Mike Heddes, Tony Givargis, Alexandru Nicolau: <b>An Extension to Basis-Hypervectors for Learning from Circular Data in Hyperdimensional Computing.</b> DAC 2023: 1-6, July 9-13, 2023, San Francisco, CA, USA  |                        |
| Hyunsei Lee, Jiseung Kim, Hanning Chen, Ariela Zeira, Narayan Srinivasa, Mohsen Imani, Yeseong Kim: <b>Comprehensive Integration of Hyperdimensional Computing with Deep Learning towards Neuro-Symbolic AI.</b> DAC 2023: 1-6, July 9-13, 2023, San Francisco, CA, USA                                       |                        |
| Mohsen Imani: <b>Lightning Talk: Bridging Neuro-Dynamics and Cognition.</b> DAC 2023: 1-2, , July 9-13, 2023, San Francisco, CA, USA  |                        |
| Junyao Wang, Sitao Huang, Mohsen Imani: <b>DistHD: A Learner-Aware Dynamic Encoding Method for Hyperdimensional Classification.</b> DAC 2023: 1-6, July 9-13, 2023, San Francisco, CA, USA  |                        |
| Junyao Wang, Hanning Chen, Mariam Issa, Sitao Huang, Mohsen Imani: <b>Late Breaking Results: Scalable and Efficient Hyperdimensional Computing for Network Intrusion Detection.</b> DAC 2023: 1-2, July 9-13, 2023, San Francisco, CA, USA  |                        |
| Xiangguo Liu, Yunpeng Luo, Anthony Goeckner, Trishna Chakraborty, Ruo Chen Jiao, Ningfei Wang, Yixuan Wang, Takami Sato, Qi Alfred Chen, Qi Zhu: <b>Invited: Waving the Double-Edged Sword: Building Resilient CAVs with Edge and Cloud Computing.</b> DAC 2023: 1-4, July 9-13, 2023, San Francisco, CA, USA |                        |
| Dongjoo Seo, Ping-Xiang Chen, Huaicheng Li, Matias Bjørling, Nikil D. Dutt: <b>Is Garbage Collection Overhead Gone? Case study of F2FS on ZNS SSDs.</b> HotStorage 2023: 102-108, July 9, 2023, Boston, MA, USA   |                        |
| Jeffrey Chen, Sang-Woo Jun: <b>Mymec: FPGA-Accelerated SmartNIC for Cost and Power Efficient IoT Sensor Networks.</b> SAMOS 2023: 57-71, July 2-6, 2023, Samos, Greece  |                        |
| Marc Titus Trifan, Alexandru Nicolau, Alexander V. Veidenbaum: <b>Enhancing the Privacy of Machine Learning via faster arithmetic over Torus FHE.</b> CSCloud/EdgeCom 2023: 46-52, July 1-3, 2023, Xiangtan, Hunan, China   |                        |

# Publications

## Publications

The following papers were published by CECS affiliates from July 2023 through December 2023 (and unreported papers from previous eNews).

Author, Title, Publication	Journal Publications
Caio Batista de Melo, Nikil D. Dutt: <b>LOCoCAT: Low-Overhead Classification of CAN Bus Attack Types</b> . IEEE Embed. Syst. Lett. 15(4): 178-181, December, 2023	
James Ferlez, Yasser Shoukry: <b>Polynomial-Time Reachability for LTI Systems With Two-Level Lattice Neural Network Controllers</b> . IEEE Control. Syst. Lett. 7: 1105-1110, December, 2023	
Amir Hosein Afandizadeh Zargari, Marzieh Ashrafiamiri, Minjun Seo, Sai Manoj Pudukotai Dinakarrao, Mohammed E. Fouda, Fadi J. Kurdahi: <b>CAPTIVE: Constrained Adversarial Perturbations to Thwart IC Reverse Engineering</b> . Inf. 14(12): 656, December, 2023	
Qi Zhu, Bo Yu, Ziran Wang, Jie Tang, Qi Alfred Chen, Zihao Li, Xiangguo Liu, Yunpeng Luo, Lingzi Tu: <b>Cloud and Edge Computing for Connected and Automated Vehicles</b> . Found. Trends Electron. Des. Autom. 14(1-2): 1-170, December, 2023	
Hamidreza Alikhani, Anil Kanduri, Pasi Liljeberg, Amir M. Rahmani, Nikil D. Dutt: <b>DynaFuse: Dynamic Fusion for Resource Efficient Multimodal Machine Learning Inference</b> . IEEE Embed. Syst. Lett. 15(4): 222-225, December, 2023	
Jian Yang, Yuwei Yin, Liqun Yang, Shuming Ma, Haoyang Huang, Dongdong Zhang, Furu Wei, Zhoujun Li: <b>GTrans: Grouping and Fusing Transformer Layers for Neural Machine Translation</b> . IEEE ACM Trans. Audio Speech Lang. Process. 31: 1489-1498, November-December, 2023	
Emad Kasaeyan Naeini, Fatemeh Sarhaddi, Iman Azimi, Pasi Liljeberg, Nikil D. Dutt, Amir M. Rahmani: <b>A Deep Learning-based PPG Quality Assessment Approach for Heart Rate and Heart Rate Variability</b> . ACM Trans. Comput. Heal. 4(4): 24:1-24:22, November, 2023	
Tianqi Zhang, Justin Morris, Kenneth Michael Stewart, Hin Wai Lui, Behnam Khaleghi, Anthony Thomas, Thiago Goncalves-Marback, Baris Aksanli, Emre O. Neftci, Tajana Rosing: <b>HyperSpikeASIC: Accelerating Event-Based Workloads With HyperDimensional Computing and Spiking Neural Networks</b> . IEEE Trans. Comput. Aided Des. Integr. Circuits Syst. 42(11): 3997-4010, November, 2023	
Soyi Jung, Chanyoung Park, Marco Levorato, Jae-Hyun Kim, Joongheon Kim: <b>Two-Stage Self-Adaptive Task Outsourcing Decision Making for Edge-Assisted Multi-UAV Networks</b> . IEEE Trans. Veh. Technol. 72(11): 14889-14905, November, 2023	
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