

## PROGRAM

### The 2024 9th International Conference on Integrated Circuits, Design and Verification (ICDV 2024)

Venue: VNU Information Technology Institute, No. 144, Xuan Thuy Road, Cau Giay District, Hanoi, Vietnam

#### Day 1: Thursday, 6 June 2024

	<b>Planary session</b>			
8:30 AM - 10:00 AM	Venue: Jonathan KS Choi Center, Vietnam National University Hanoi Chairs: Prof. Xuan-Tu Tran (VNU Information Technology Institute, Vietnam)			
Time	Paper #	Title	Authors	Type
8:30 AM -		Opening session		
8:40 AM -		Keynote #1 Restart of Japan Semiconductor and Our Activity on Steep Slope devices and Cryo-CMOS for Quantum Computing	Jiro IDA Kanazawa Institute of Technology, Japan	Keynote
9:20 AM -		Survey of ML Applications in Function Verification	Mr. Michael Chiang Deputy Director Siemens EDA	Invited
10:00 AM	Tea break			
	<b>Session: AI Circuits &amp; Systems</b>			
	Venue: Jonathan KS Choi Center, Vietnam National University Hanoi Chairs: Prof. Cong-Kha Pham (University of Electro-Communications, Japan)			
Time	Paper #	Title	Authors	Type
10:15 AM -		Keynote #2 Survey and Exploration of Advancements in Hardware Neural Computing	Prof. Oskal Tzyh-Chiang Chen National Chung Cheng University, Taiwan	Keynote
11:15 AM	1571016430	Ultra-Low Power Neural Network Processors using Analog-Based Computation	Hiroshi Fuketa (National Institute of Advanced Industrial Science and Technology (AIST), Japan)	Invited
11:40 AM	1570950897	Designing a Compact Spiking Neural Network for Learning and Recognizing Digits on 180nm CMOS Process	Van-Sang Phung , Hong-Hai Thai and Duc-Hung Le (University of Science, VNU-HCM, Vietnam)	Oral
11:55 AM	1570936585	An Efficient Hardware Implementation of Spiking Neural Network Using Approximate Izhikevich Neuron	Ryoji Kobayashi and Khanh N. Dang (University of Aizu, Japan)	Oral

12:10 PM	1571009551	Electronic Element Parameter Estimation of Amplifier Circuit using Regression Algorithms	Xuxin CHEN, Cheng CAI and Huapei WANG (Shanghai Dianji University, China); Fang HUO (UNISOC Shanghai Technologies Co., Ltd, Shanghai, China)	Oral
11:15AM-12:30PM	<p style="text-align: center;"><b>Session: Special session on Signal Processing for Manufacturing Applications</b>  Venue: Room 603, Building E3, Vietnam National University Hanoi  Chairs: Dr. Dinh-Thai Kim, Dr. Nhu-Tung Ngyen (VNU International School, Vietnam)</p>			
<b>Time</b>	<b>Paper #</b>	<b>Title</b>	<b>Authors</b>	<b>Type</b>
11:15 AM	1570983219	Blockchain-based Reconfiguration Management For Smart City Architecture	An Nguyen-Khanh, Tri Le-Dinh, Bao Nguyen-Van, Thuat Nguyen-Khanh and Quan Le-Trung (University of Information Technology - VNUHCM, Vietnam)	Oral
11:30 AM	1570983220	Enhance Security for the E-payment Application with Blockchain Technology	Hung Le-Huy, Thuat Nguyen-Khanh and Quan Le-Trung (University of Information Technology - VNUHCM, Vietnam)	Oral
11:45 AM	1571000173	Smart Health Monitoring Wearable with Integrated Sensors, Machine Learning, and IoT	Viet-Hoan Bui (Phenikaa University, Vietnam); Duc-Nghia Tran (Vietnamese Academy of Science and Technology, Vietnam); To-Hieu Dao, Quang-Trung Hoang, Hoang-Dieu Vu, Toi Van Nguyen, An Van Tran and Tran Duc-Tan (Phenikaa University, Vietnam)	Oral
12:00 PM	1571003100	Detect and Minimize Reverse Power Flow in a Distribution System Integrated Renewable Energy	Nguyen Cong Chinh and Nguyen Nhat Tung (Thuyloi University, Vietnam); Manh-Hung Ha (International School, Vietnam National University, Vietnam)	Oral
12:15 PM	1571009803	Advancing Robust Few-shot Surface Defect Detection through Meta-learning	Wenny Ramadha Putri (National Central University, Taiwan); Yung-Hui Li (AI Research Center, Hon Hai Research Institute, Taiwan); Jia Ching Wang (National Central University, Taiwan)	Oral
12:30 PM	Lunch (Venue: Jonathan KS Choi Center)			
1:30 PM - 3:10 PM	<p style="text-align: center;"><b>Session: Keynotes</b>  Venue: Jonathan KS Choi Center, Vietnam National University Hanoi  Chairs: Prof. Van-Phuc Hoang (LQDTU, Vietnam)</p>			
<b>Time</b>	<b>Paper #</b>	<b>Title</b>	<b>Authors</b>	<b>Type</b>
1:30 PM -	-	Keynote #3 Hardware accelerator design optimization for PQC algorithms	Prof. Makoto Ikeda University of Tokyo, Japan	Keynote

2:30 PM	-	Keynote #4 Secured Network-on-Chip (SoC) Framework for RISC-V Computer System	Trong-Thuc Hoang, Binh Kieu-Do-Nguyen, and Cong-Kha Pham University of Electro-Communications (UEC), Tokyo, Japan	Keynote
3:10 PM	Tea break			
3:25 PM - 5:10 PM	<b>Session: HW security &amp; cryptography</b> Venue: Jonathan KS Choi Center, Vietnam National University Hanoi Chairs: Prof. Quang-Kien Trinh (LQDTU, Vietnam)			
Time	Paper #	Title	Authors	Type
3:25 PM	1571002859	RISC-V SoC with NTT-Blackbox for CRYSTALS-Kyber Post-Quantum Cryptography	Duc-Thuan Dam, Trong-Hung Nguyen, Binh Kieu-Do-Nguyen, Trong-Thuc Hoang and Cong-Kha Pham (University of Electro-Communications (UEC), Japan)	Oral
3:40 PM	1571009589	Low-latency Elliptic Curve Scalar Multiplication Accelerator on FPGA	Anawin Opasatian and Makoto Ikeda (University of Tokyo, Japan)	Oral
3:55 AM	1571012907	Chaotic Multiple-image Encryption and Individual-image Decryption with FPGA Implementation	Thang Manh Hoang, Quang-Anh Pham (Hanoi University of Science and Technology, Vietnam); Manh-Hai Hoang (University of Alberta, Canada); Do Quang Tran (Hanoi University of Science and Technology, Vietnam); Safwan El Assad (École Polytechnique de l'Université de Nantes & IETR Laboratory, France)	Oral
4:10 PM	1571014307	Dynamical Selective Image Encryption Using Chaos	Thang Manh Hoang (Hanoi University of Science and Technology, Vietnam), Manh-Hai Hoang (University of Alberta, Canada), Quang-Anh Pham (Hanoi University of Science and Technology, Vietnam)	Oral
4:25 AM	1571022004	Low-power Data Protection for Energy-harvesting Beat Sensors	Duy-Hieu Bui, The-Anh Nguyen and Huyen-Trang Pham Thi, Xuan-Tu Tran (VNU Information Technology Institute, Hanoi, Vietnam); Koichiro Ishibashi (The University of Electro-Communications, Japan)	Oral
4:40 PM	1571028638	W2E (Workout to Earn): A Low Cost DApp based on ERC-20 and ERC-721 standards	Do Hai Son (VNU Information Technology Institute, Hanoi, Vietnam); Nguyen Danh Hao and Tran Thi Thuy Quynh (VNU University of Engineering and Technology, Hanoi, Vietnam); Le Quang Minh (VNU Information Technology Institute, Hanoi, Vietnam)	Oral

4:55 AM	1571002808	S-Boxes with Optimal Strict Avalanche Criterion using Chaotic Map	Phuc-Phan Duong (University of Electro-Communications, Japan); Hieu Minh Nguyen and Ba-Anh Dao (Academy of Cryptography Techniques, Vietnam); Thai-Ha Tran, Binh Kieu-Do-Nguyen, Cong-Kha Pham and Trong-Thuc Hoang (University of Electro-Communications (UEC), Japan)	Oral
3:25 PM - 5:10 PM	<b>Session: Special Session on Intelligent Control &amp; AI I</b> Venue: Room 603, Building E3, Vietnam National University Hanoi Chairs: Dr. Manh-Hung Ha, Dr. Nhu-Tung Nguyen (VNU International School, Vietnam)			
Time	Paper #	Title	Authors	Type
3:25 PM	1570983482	Design and Modelling of Machine Learning Based Photonic Sensor for Different Disease Detections	Akshay Rahangdale, Vaibhav Singh, Heeren Kumawat and Yasho Vardhan Gwaley (Indian Institute of Information of Technology, Bhopal, India), Gautam Narayan Nirala (National Institute of Technology Patna, India), Gaurav Kumar Bharti (Indian Institute of Information of Technology, Bhopal, India)	Oral
3:40 AM	1571002895	VNEMOS: Vietnamese Speech Emotion Inference Using Deep Neural Networks	Quang Anh N.D, Manh-Hung Ha, Quynh Chi Nguyen, Thu Hien Nguyen Thi, Quan Vu, Minh-Duc D.X, Duc-Chinh Nguyen, Thai Kim Dinh (International School, Vietnam National University, Vietnam)	Oral
3:55 PM	1571002948	Design neural network-based adaptive controller for underactuated 3-wheeled Mobile Robot	Minh Duc Vu, Dang Tuan Phong, Hai Le Xuan (International School, Vietnam National University, Vietnam), Dzung Le Van (Hung Vuong University, Vietnam), Dzung Manh Do (Hanoi University of Science and Technology, Vietnam), Ngoc Thanh Pham (International School, Vietnam National University, Vietnam)	Oral

4:10 AM	1571003212	Developed a Tomato-Condition Classification System using Image Processing and YOLO Technology	Quang-Huy Do Ba, Van-Nam Pham, Van-Thanh Nguyen (Hanoi University of Industry, Vietnam), Quang-Minh Nguyen, Ba-Thong Vo (Hanoi University of Science and Technology, Vietnam), Manh-Hung Ha (International School, Vietnam National University, Vietnam), Dinh-Thai Kim (International School, Vietnam National University, Hanoi, Vietnam)	Oral
4:25 PM	1571003260	Patient Remote Monitoring System Using MQTT Protocol for ECG Signals	Duc-Anh Tran Le, Ba-Thong Vo (Hanoi University of Science and Technology, Vietnam), Van-Nam Pham, Quang-Huy Do Ba, Thi-Nga Nguyen (Hanoi University of Industry, Vietnam), Manh-Hung Ha, Dinh-Thai Kim (International School, Vietnam National University, Vietnam)	Oral
4:40 AM	1571009655	Optimizing Traffic Light Control using YOLOv8 for Real-Time Vehicle Detection and Traffic Density	Quang-Anh Nguyen Duc, Thai Dinh Kim, Quynh-Chi Nguyen, Thu Hien Nguyen Thi, Quan Vu, Minh-Duc Do Xuan, Van-Ninh Nguyen (International School, Vietnam National University, Hanoi, Vietnam)	Oral
4:55 PM	1571009708	Lychee Instance Segmentation at Different Growth Stages Using YOLOv8-seg Model	Thai Dinh Kim, Quang-Anh Nguyen Duc, Tuan-Minh Nguyen, Minh-Anh Nguyen, Ho-Bao Pham, Tien-Thanh Do (International School, Vietnam National University, Hanoi, Vietnam)	Oral
5:30 PM	Banquet (a shuttle bus will pick you up at the conference venue) Location: Sheraton Hanoi West Address: 36 Le Duc Tho Road, Nam Tu Liem District, Hanoi, Vietnam			
<b>Day 2: Friday, 7 June 2024</b>				
8:30 AM - 9:30 AM	<b>Session: Keynotes</b> Venue: Jonathan KS Choi Center, Vietnam National University Hanoi Chairs: Prof. Thanh-Loan Pham-Nguyen (Hanoi University of Science & Technology, Vietnam)			
<b>Time</b>		<b>Title</b>	<b>Authors</b>	<b>Type</b>
8:30 AM	-	Keynote #5 Online ASR and ICA for EEG Signal Processing: Algorithm, Architecture, and Implementation	Prof. Lan-Da Van National Yang Ming Chiao Tung University, Taiwan	Keynote

<b>Session: SoCs &amp; Systems</b> Venue: Jonathan KS Choi Center, Vietnam National University Hanoi Chairs: Prof. Thanh-Loan Pham-Nguyen (Hanoi University of Science & Technology, Vietnam)				
9:30 AM - 10:40 AM				
9:30 AM	1571016770	Activities for Open-Source Integrated Circuits Design in Japan	Akira Tsuchiya (The University of Shiga Prefecture, Japan)	Invited
9:55 AM	1570945188	Advanced Timing Closure by Synopsys Tweaker™	Khoa Vu Xuan Hoang (Renesas Electronics Corporation , Vietnam)	Oral
10:10 AM	1571009356	A High-Performance CNN Hardware Accelerator for Covid-19 Feature Extraction from X-ray Images	Hung K. Nguyen, Huu-Truong Duong and Duc-Thang Trang (VNU University of Engineering and Technology, Vietnam)	Oral
10:25 AM	1571009387	Re-structuring CNN using quantum layer executed on FPGA hardware for classifying 2-D data	Nhat Hoang Bach, Le Vu Ha, Dinh Lam Tran (Academy of Science and Technology, Hanoi, Vietnam); Thanh Toan Dao, Thi Thu Hong Luu, Duy Ninh Nguyen (University of Transport and Communications, Vietnam)	Oral
10:40 AM		Tea break		
<b>Session: Verification &amp; DFT</b> Venue: Jonathan KS Choi Center, Vietnam National University Hanoi Chairs: Prof. Koichiro Ishibashi (University of Electro-Communications, Japan)				
10:55AM - 11:55AM				
Time	Paper #	Title	Authors	Type
10:55 AM	1570945155	Enhancing functional verification productivity through an automated workflow with Machine Learning based tools	Chi Lan Phuong Nguyen, Quyet Van Hoang, An Hai Lam Tran, Khoa Dac Tran, Nghia Trong Tran, Takafumi Noguchi (Renesas Design Vietnam Co., Ltd, Vietnam); James David, So Katogi and Yukie Endo (Cadence Design Systems, Japan); Koji Hirakimoto (Renesas Electronics Corporation, Japan)	Oral
11:10 AM	1571002422	An Efficient Design Flow for Iterative Asynchronous Bundled-Data Circuits on FPGA	Tamnuwat Valeeprakhon, Zhen Zhang and Makoto IWATA (Kochi University of Technology, Japan)	Oral
11:25 AM	1571002581	Improving Fault Coverage of Random Pattern Test using a Scalable Distance Function	Sangseok Lee, Sungjae Lee and Jin-Ho Ahn (Hoseo University, South Korea )	Oral

11:40 AM	1571008236	Quantum Physics-Based Analytical Model for Analysing Planar Ohmic Contacts	Thanh Pham Chi (RMIT University Vietnam, HoChiMinh city, Vietnam) Hiep Tran and James Partridge (RMIT University, Melbourne, Australia); Anthony Holland (RMIT University Vietnam, HoChiMinh city, Vietnam)	Oral
<b>Online Session</b> Venue: Room 603, E3, Vietnam National University Hanoi Zoom Link: <a href="https://us06web.zoom.us/j/6218753030?pwd=kjvwI0ZbVTuUmcuF4YaObUXtcaZRKu.1&amp;omn=87973376932">https://us06web.zoom.us/j/6218753030?pwd=kjvwI0ZbVTuUmcuF4YaObUXtcaZRKu.1&amp;omn=87973376932</a> Chairs: Prof. Khanh N. Dang (University of Aizu, Japan)				
<b>Time</b>	<b>Paper #</b>	<b>Title</b>	<b>Authors</b>	<b>Type</b>
10:55 AM	1570982345	Low clock power standard cell flip-flop topologies	Rohini Krishnan (Intel Technology India Pvt. Ltd. ,India) and Eric Asperheim (Intel Corporation, USA)	Oral
11:10 AM	1571002647	Design and Integration of Digital Thermal Sensors	Rohini Krishnan, Ankush Dubey, Peeyush Tripathi, Krupa Babu Kalivarapu (Intel India Pvt. Ltd. , India)	Oral
11:25 AM	1571002441	A Deterministic Concurrent-Routing Algorithm to Improve Wire Selection in FPGA Routing	Umair F. Siddiqi, Sadiq M. Sait (King Fahd University of Petroleum & Minerals, Saudi Arabia)	Oral
11:55 AM Lunch (Venue: 37th Street Restaurant, 5th Floor, Indochina Plaza)				
<b>Session: Keynotes</b> Venue: Jonathan KS Choi Center, Vietnam National University Hanoi Chairs: Dr. Van-Trung Nguyen (LQDTU, Vietnam), Prof. Thanh-Toan Dao (University of Transportation and Communications, Vietnam)				
<b>Time</b>	<b>Paper #</b>	<b>Title</b>	<b>Authors</b>	<b>Type</b>
1:30 PM		Keynote #6 Towards battery-free and low-cost distributed sensor node: novel IC approaches.	Dr. Orazio Aiello University of Genova, Italy	Keynote
<b>Session: RF, sensors &amp; interfaces</b> Venue: Jonathan KS Choi Center, Vietnam National University Hanoi Chairs: Dr. Van-Trung Nguyen (LQDTU, Vietnam), Prof. Thanh-Toan Dao (University of Transportation and Communications, Vietnam)				
<b>Time</b>	<b>Paper #</b>	<b>Title</b>	<b>Authors</b>	<b>Type</b>
2:30 PM	1571016450	Microwave and Millimeter Wave Rectennas with Gated Anode Diode and Diode on Antenna Topologies	Naoki Sakai, Masaomi Tsuru, Keisuke Noguchi and Kenji Itoh (Kanazawa Institute of Technology, Japan)	Invited
2:55 AM	1570999625	A Wideband Divide-by-2/4 Static CML Frequency Divider With Quadrature Outputs	Zhennan Li, Zhiquan Li and Xiaowei Wang (Southeast University, China)	Oral

3:10 PM	1571000007	A Ku-band SIW Power Divider With High Isolation Using Coupled Resonators	Ngoc Nhat Tan Nguyen, Tuan Hung Nguyen, Duy Manh Luong, Ta Mai Van, Thuy Linh Nguyen and Thi Thu Huong Tran (Le Quy Don Technical University, Vietnam)	Oral
3:25 AM	1571009732	Design and Implementation of a 2W S-band Power Amplifier for Wireless Networks	Tran Van Hoi, Ngo Thi Lanh, Doan Huu Chuc (Thuyloi University); Duong Bach Gia (VNU University of Engineering and Technology, Hanoi, Vietnam)	Oral
3:40 PM	1571003131	Flexible and Expandable RF Coil System with Soft Actuators for Deep Organ Imaging in MRI	Seonghyeon Lee, Woojun Jung, Ma Yunhao, Yubeen Shin and Yongha Hwang (Korea University, Sejong, Korea)	Oral
3:55 AM	1571003143	A whisker sensor with a tetrapod particle-infused jamming actuator for extensive measurement range	Woojun Jung, Seonghyeon Lee, Deyi Zheng, Chaewon Lee and Yongha Hwang (Korea University, Sejong, Korea)	Oral
2:00 PM - 4:10 PM	<b>Session: Sepecial Session on Intelligent Control &amp; AI II</b> Venue: Room 603, Building E3, Vietnam National University Hanoi Chairs: Dr. Manh-Hung Ha (VNU International School, Vietnam), Dr. Le-Cuong Vo (Hanoi University of Science & Technology, Vietnam)			
Time	Paper #	Title	Authors	Type
2:00 PM	1570983534	A novel deep learning based method for Vietnamese ID card skew correction	Vo Le Cuong, Nguyen Phuong Huy, Ngo Van Canh, Do Duy Thai, Nguyen Sy Duy and Vo Sy Hung (Hanoi University of Science & Technology, Vietnam)	Oral
2:15 PM	1571009820	Diagnosing Electric Motor Faults based on Vibration Signals Using YOLOv8	Hoai-Linh Tran (International School, Vietnam National University, Hanoi, Vietnam) , Van-Nam Pham (Hanoi University of Industry, Vietnam), Duc-Thanh Nguyen (Hanoi University of Science and Technology), Quang-Huy Do Ba (Hanoi University of Industry, Vietnam), Xuan-Hai Le, Dinh-Thai Kim (International School, Vietnam National University, Hanoi, Vietnam)	Oral
2:30 PM	1571010875	Development of low-cost myoelectric prosthetic hand with force feedback	Neeraj Sharma and Aryan Jadhav (IIT (BHU), India), Alok Prakash (CSIR, New Delhi, India), Shiru Sharma (IIT (BHU), India)	Oral
2:55 AM	1571014776	Trajectory Tracing Control of 3-DOF Delta Robot Using Dynamic Surface Control	Nguyen Van Ninh (VNU International School, Vietnam) Dang Xuan Dang and Nguyen Quang Huy (VNU University of Engineering & Technology), Pham Van Nam and Luong Hoang Phong ( Hanoi University of Industry), Nguyen Van Ninh (VNU International School, Vietnam)	Oral

3:10 PM	1571002683	Horizontal graph connections for skeleton-based human action recognition on UAV-Human	Dinh-Tan Pham (International School, Vietnam National University, Hanoi, Vietnam)	Oral
3:25 AM	1571003258	Sports Activity Recognition with Deep Learning Models and Accelerometers	Hoang-Dieu Vu and Quang-Tu Pham (Phenikaa University, Vietnam); Duc-Nghia Tran (Vietnamese Academy of Science and Technology, Vietnam); Hoang-Nam Le, Dinh-Dat Pham, Van-Toi Nguyen, To-Hieu Dao and Duc-Tan Tran (Phenikaa University, Vietnam)	Oral
3:40 PM	1571008123	Push and Pull Robot with Reinforcement Learning Algorithms	Hoang-Dieu Vu (Phenikaa University, Vietnam); Phi-Khanh Phung Cong (Hanoi National University of Education, Vietnam); Nhat-Minh Hoang, Khai Tran, Duy Ngo Manh, Dinh-Dat Pham and Tu Pham (Phenikaa University, Vietnam)	Oral
3:55 PM	1571009800	Surgical Tool Detection and Pose Estimation using YOLOv8-pose Model: A Study on Clipper Tool	Thai Dinh Kim, Ngoc-Nam Dao, Duc-Vinh Tran, Anh Long-Quang Tran and Duc-Anh Pham (International School, Vietnam National University, Hanoi, Vietnam)	Oral
4:10 PM	Tea break			
4:25 PM - 5:10 PM	<p style="text-align: center;"><b>Session Analog &amp; Mixed signal circuits</b>  Venue: Jonathan KS Choi Center, Vietnam National University Hanoi  Chairs: Dr. Orazio Aiello (Univesity of Genova, Italy)</p>			
4:25 PM	1570945110	Comparison of Analog Circuit Sizing Networks and Number of Steps	Kazuya Yamamoto and Nobukazu Takai (Kyoto Institute of Technology, Japan)	Oral
4:40 PM	1570991069	A Dedicated 25% Duty Cycle Clock Data Recovery for 56Gb/s PAM4 Receiver with Combined FFE+DFE	Yan Wang (Southeast University, China); Qingsheng Hu (Southeast University, China); Lianguo Chi (State Grid Wulumuqi Electric Power Supply Company, China); Jiabao Zhang (State Grid Wulumuqi Electric Power Supply Company, China)	Oral
4:55 PM	1571030921	Design and Implementation of a Low-Power VCO-based ADC for IoT Applications	Dinh-Toi Nguyen, Duc-Manh Tran, Duy-Hieu Bui, Xuan-Tu Tran (VNU Information Technology Institute, Hanoi, Vietnam)	Oral
5:10 PM	Closing session			
<p><b>Day 3: Saturday, 8 June 2024</b>  Social Event: A day trip to HaLong Bay (7:00 AM - 8:00 PM)  Fee: \$99/person (registered separately at the conference desk)</p>				