

# Tentative Technical Program of IEEE ICDV 2026

|                 | Room: Hoan Kiem                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Room: Ba Dinh                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Time<br>(Hanoi) | Oct. 08                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 7:30-8:30       | Registration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 8:30-8:50       | Opening Session                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 8:50-9:25       | <b>Keynote 1: “Next-Generation IC Security: Resilient Hardware Design and AI-Enabled Forensic Verification”</b><br><i>Prof. Bah-Hwee Gwee, Nanyang Technological University, Singapore</i><br>Chair: Prof. Xuan Nam Tran, LQDTU                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 9:25-10:00      | <b>Keynote 2: “Enforcing Security in the Supply Chain of Chiplets through Transparency”</b><br><i>Dr. Sylvain Guilley, Cadence Design Systems and Telecom Paris, France</i><br>Chair: Prof. Xuan Tu Tran, VNU ITI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 10:00-10:25     | <b>Coffee break &amp; Expo</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 10:25-11:55     | <b>Session R1:</b> 5 papers/90 min<br><b>Memory, Digital Systems and Testing</b><br><b>Chairs:</b> TBD<br><b><i>A Method for Automated Test Input Generation on Verilator-Generated RISC-V Processor Models</i></b><br>Hiếu Đức Vũ (Vietnam National University Hanoi, Vietnam); Duc-Anh Nguyen and Pham Ngoc-Hung (VNU University of Engineering and Technology, Vietnam)<br><b><i>Algorithm-First NPU Extension via Dual-LLM Workflow</i></b><br>Hsin-I Wu (DeepMentor, Taiwan); You-En Wu (National Yang Ming Chiao Tung University, Taiwan); Ruei-En Wu (Taipei Municipal Heping High School, Taiwan)<br><br><b><i>PEARL: Credit-Aware Minimal-Adaptive Routing for Mesh NoC</i></b><br>Tien-Hieu Le (Vietnam National University, Hanoi, Vietnam & Microelectronics and Computer Sciences (MCS) Research Center, N.A Viet Nam Ltd, Nghe An, Vietnam); Duy-Hieu Bui (Vietnam National University, Hanoi, Vietnam); Xuan-Tu Tran (Vietnam National University, Hanoi, Vietnam)<br><br><b><i>Optimization-Guided Traffic Generation: Discovering AXI4 Bottlenecks in Edge CNN Accelerators</i></b><br>Hieu Nguyen (PTIT University, Vietnam); Thao Viet Vuong (Posts and Telecommunications Institute of Technology, Vietnam & PTIT, Vietnam); Huyen Thanh Dao (Posts and Telecommunications Institute of Technology, Vietnam & Gunma University, Vietnam); Dao Anh Vu and Minh-Tuan Le | <b>Session R2:</b> 5 papers/90 min<br><b>AI, IoT &amp; Communications 1</b><br><b>Chairs:</b> TBD<br><b><i>3D Maneuvering Target Tracking Algorithm Using Unscented Kalman Filter and Particle Filter</i></b><br>Ngo Nhat Anh (Hanoi University of Science and Technology, Vietnam); Hoang Manh Thang (Hanoi University of Science and Technology (HUST), Vietnam)<br><br><b><i>A Dual-Stream Multi-Scale Fusion Network with YOLO-Style Design for Infrared and Visible Images</i></b><br>Tsung-Han Tsai, Shang-Yin Yu and Bo-En Wei (National Central University, Taiwan)<br><br><b><i>A Fully-Integrated Raman and Autofluorescence Benchtop System with On-Device AI for Sub-Second Skin Cancer Screening</i></b><br>Hoang ChuDuc (The VNU University of Engineering and Technology & National Technology Innovation Fund, Vietnam)<br><br><b><i>Action-Responsive Contrastive Network for Efficient Joint-based Hand Gesture Recognition</i></b><br>Duy Tien Le (Vietnam National University, Hanoi, Vietnam); Dinh-Tan Pham (International School, Vietnam National University, Hanoi, Vietnam)<br><br><b><i>An Always-On Screening and Event-Triggered CNN-LSTM Architecture for Low-Power Wearable Fall Detection</i></b><br>Anh Vu-Duc and Thanh Ta-Van (Posts and Telecommunications Institute of Technology, Vietnam); Bien Nguyen Quang and Duan |

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             | (Posts and Telecommunications Institute of Technology, Vietnam)<br><br><i><b>A Low-Power and Compact Dynamic Matching and Comparator Circuit with Early Termination for Memory-Centric Computing</b></i><br>Linh Le, Dinh Ha Dao, Kien Trinh Quang, Thi-Hong-Tham Tran and Khoa-Sang Nguyen (Le Quy Don Technical University, Vietnam)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Luong-Cong (Posts and Telecommunications Institute of Technology (PTIT), Vietnam)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 12:00-13:20 | <b>Lunch</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 13:30-14:05 | <b>Keynote 3: “Practical Non-Destructive Detection: Case Study of Durain, Mangosteen, and Granular Ingredients”</b><br><i>Prof. Kosin Chamnongthai, King Mongkut’s University of Technology Thonburi, Thailand</i><br>Chair: Prof. Duc Hung Le, HCMUS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 14:05-14:30 | <b>Invited Talk 1: Bridging the Gap Between Specification and Reality: Cellular Modem Development and Global Field Testing</b><br><i>Prof. Chaehag Yi, Seoul National University, Korea</i><br>Chair: Prof. Quang Kien Trinh, LQDTU                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 14:30-14:55 | <b>Coffee break &amp; Expo</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 14:55-16:07 | <b>Session R3: 4 papers/72 min</b><br><b>FPGA and Embedded Systems 1</b><br><b>Chairs: Vu Hoang Gia, LQDTU</b><br><br><i><b>Optimizing Quartznet and Conformer Models for Real-Time Vietnamese Speech Recognition on Edge Devices for Autonomous Vehicles</b></i><br>Thanh-AN Luong (Vietnam National University, Hanoi, Vietnam); Huyen-Trang Nguyen-Thi (The University of Da Nang, Vietnam); Duy-Hieu Bui (Vietnam National University, Hanoi, Vietnam); Xuan-Tu Tran (Vietnam National University, Hanoi, Vietnam)<br><br><i><b>A Lightweight, High-Throughput True Random Number Generator on FPGA Using an RTL-Optimized Elias Extractor</b></i><br>Hieu Nguyen (PTIT University, Vietnam); Hop Quynh Pham (Posts and Telecommunications Institute of Technology, Vietnam); Huyen Thanh Dao (Posts and Telecommunications Institute of Technology, Vietnam & Gunma University, Vietnam)<br><br><i><b>A Portable Field-Inspection Workflow for Color- and Structure-Faithful Enhancement of PCB Photographs on SBC</b></i><br>Le Tien Hung, Nguyen Huu Tho and Nguyen Le Van (Le Quy Don Technical University, Vietnam) | <b>Session R4: 4 papers/72 min</b><br><b>Analog/Mixed-Signal Circuits 1</b><br><b>Chairs: Pham Xuan Thanh, HaIU</b><br><br><i><b>A 16 Gbps High-Speed Receiver with Active-Inductor-Based Continuous-Time Linear Equalizer on 14nm CMOS Process</b></i><br>Lê Nguyễn Lam Trường (The University of Science, Ho Chi Minh City, Vietnam); Trần Đức Hồng Quân (Synopsys Vietnam, Vietnam); Nguyen Vu Nhat Hoang (Synopsys Viet Nam, Vietnam); Hung Le Duc (University of Science, VNU-HCM, Vietnam)<br><br><i><b>A Dual-Channel 6-bit 10-GS/s DAC Design for Driving Forward-Biased MZMs in PNN Prototyping Using 7-nm FinFET Technology</b></i><br>Pradyumna Vellanki (National Sun Yat-Sen University, Taiwan); Chen-Wei Yen (National Sun Yat-sen University, Taiwan); L S S Pavan Kumar Chodiseti and Chua-Chin Wang (National Sun Yat-Sen University, Taiwan)<br><br><i><b>A Flipped Voltage Follower Based Capacitor-less LDO with gm-Feedforward Compensation and Slew-rate Enhancement</b></i><br>Minh-Tuan Nguyen (VNU University of Engineering and Technology, Vietnam); Duong Huu-Truong and Mai-Huong Nguyen Thi (Vietnam National University Hanoi, Vietnam); Tuan Anh Mai (VNU University of Engineering and Technology, Vietnam); Linh Mai (University of Engineering and Technology, VNU-Hanoi & UET, Vietnam) |

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             | <p><b><i>Dual-Head Incremental Object Detection on Embedded Vision Platforms</i></b><br/>Tsung-Han Tsai and Yao-Chieh Tseng<br/>(National Central University, Taiwan)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <p><b><i>A P-SSHI Interface for Piezoelectric Energy Harvesting with an Output-Power-Evaluation MPPT Achieving 98.8% MPPT Efficiency</i></b><br/>Zhongxin Ye, Rui Zhang and Jianping Guo<br/>(Sun Yat-sen University, China)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 16:10-17:40 | <p><b>Session R5:</b> 5 papers/90 min<br/><b>Hardware Security and Cryptography 1</b></p> <p><b><i>A DWT-SVD Color Image Watermarking Scheme with Wavelet-GAN-Based Chrominance Reconstruction for Side-Information Reduction</i></b><br/>Phuong Nguyen Thu and Thanh Ta Minh<br/>(Le Quy Don Technical University, Vietnam)</p> <p><b><i>A High-Speed, Constant-Time, and Memory-Efficient TRNG-Based Sampler for Hamming-Quasi Cyclic KEM</i></b><br/>Duc-Thuan Dam (The University of Electro-Communications, Japan); Nguyen Huu Tho (Le Quy Don Technical University, Vietnam); Hung Le Duc (University of Science, VNU-HCM, Vietnam); Cong-Kha Pham (University of Electro-Communications (UEC), Japan)</p> <p><b><i>A Sub-3.82% Native BER Strong PUF Using Power-Gated Diode-Clamped Inverter Chain and Auto-Stabilizing Mechanism in 28nm CMOS</i></b><br/>Trung Tien Hoang (Hanoi University of Science and Technology, Vietnam); Dinh Quoc Bao Tran (Chungbuk National University, Korea (South) &amp; Chungbuk National University, Korea (South)); Van Truong Nguyen (Chungbuk National University, Korea (South)); Loan Pham-Nguyen (Hanoi University of Science and Technology &amp; School of Electronics and Telecommunications, Vietnam); Jong-Phil Hong (Chungbuk National University, Korea (South))</p> <p><b><i>An Area-Efficient Polynomial Arithmetic for HQC</i></b><br/>Nguyen Tien Hung, Nguyen Huu Tho, Hai Thanh Mai and Quang Nguyen-The (Le Quy Don Technical University, Vietnam); Duc-Thuan Dam (The University of Electro-Communications, Japan)</p> | <p><b>Session R6:</b> 5 papers/90 min (from RF)<br/><b>RF &amp; microwave circuits</b></p> <p><b><i>A 20.2-28 GHz Wide-Tuning Low-Power CMOS LC-VCO with Push-Push Frequency Doubler for FMCW Radar Applications</i></b><br/>Juan Salvador (San Jose State University, USA); Mai-Khanh Nguyen (University of Nevada, Las Vegas, USA)</p> <p><b><i>A Wideband Low-Power CMOS Active Mixer with Current-Reused RF Transconductance Enhancement</i></b><br/>Khai Van Mai and Tuan Anh Mai (VNU University of Engineering and Technology, Vietnam); Linh Mai (University of Engineering and Technology, VNU-Hanoi &amp; UET, Vietnam)</p> <p><b><i>Compact Quad-Band BPF Based on Four-Stage Folded Open-Loop SIRs for Sub-6 GHz Applications</i></b><br/>Thang Van Nguyen (Vietnam National University Hanoi, Vietnam); Cuong Quoc Vuong (Vietnam National University, Vietnam); Nguyen Khanh Huyen (VNU University of Engineering and Technology, Vietnam); Thien Minh Nguyen and Duong Nguyen (International University, Vietnam); Tuan Anh Mai (VNU University of Engineering and Technology, Vietnam); Linh Mai (University of Engineering and Technology, VNU-Hanoi &amp; UET, Vietnam)</p> <p><b><i>A 6 Bit 35-38 GHz Passive Vector-Sum Phase Shifter With Sub-1° RMS Phase Error</i></b><br/>Dinh-Hung Le and Kim Van Phan (Ho Chi Minh City University of Technology, Vietnam); Sanghun Lee (WAVE PIA, Korea (South)); Cuong Huynh (Ho Chi Minh City University of Technology, Vietnam)</p> <p><b><i>On the Thermal and Voltage Stability of DLS-like Ultra-low-power Ring Oscillators</i></b><br/>Dinh Quang Anh (Le Quy Don Technical University, Vietnam); Orazio Aiello (University of Genova, Italy); Van-Phuc Hoang (Le Quy Don Technical University, Vietnam)</p> |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                | <p><b>Hardware-Enforced Security Architecture for Multi-Core RISC-V Systems with Network-on-Chip</b></p> <p>Tri-Duc Ta (University of Sciences, VNU-HCM, Vietnam); Van-Quang Vu, Trong-Quy Nguyen, Anh-Quan Le and Nhat-Quang Le (The University of Information Technology, Vietnam); Cong-Kha Pham (University of Electro-Communications (UEC), Japan); Hung Le Duc (University of Science, VNU-HCM, Vietnam)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 18:30-21:00    | Gala Dinner                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Oct. 09</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 7:30-8:00      | Registration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 8:00-8:25      | <p><b>Invited Talk 2: “Open-Source EDA and PDKs in VLSI Design: The Era of Agentic AI, Maturing Ecosystems, and Democratized Silicon”</b></p> <p>Prof. Trong-Thuc Hoang, University of Electro-Communications, Japan &amp; Prof. Van-Phuc Hoang, Le Quy Don Technical University, Vietnam</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 8:25-9:00      | <p><b>Keynote 4: “From Cloud Datacenters to Secure Edge: Review of Compute-in-Memory at EUV/FINFET Era”</b></p> <p>Prof. Koichiro Ishibashi, Universiti Teknologi Malaysia Kuala Lumpur (UTMKL), Malaysia</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 9:00-9:20      | Coffee break & Expo                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 9:20-9:45      | <p><b>Invited Talk 3: A Methodology to Derive Security Specifications for Complex Electronic Systems</b></p> <p>Sylvain Guilley (Telecom Paris &amp; Cadence Design Systems, France), Ritu-Ranjan Shrivastwa and Ville Yli-Mayry (Cadence Design Systems, France)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 9:50-11:38     | <p><b>Session R7: 6 papers/108 min</b><br/> <b>AI, Quantum Tech. &amp; Secure Autonomous UxV Systems</b><br/> <b>Chairs: Prof. Ta Minh Thanh, LQDTU</b></p> <p><b>AI-Enabled Autonomous UxV Navigation via Multi-Sensor Fusion and Risk-Aware Decision Making</b><br/>         Trung Thi Hoa Trang Nguyen and Toan Dao (University of Transport and Communications, Vietnam); Binh Ngo, Thanh (University of Transport and Communications &amp; UTC, Vietnam); Sy Dieu Nguyen (University of Transport and Communications, Vietnam)</p> <p><b>Component-wise AST Similarity Metric for Evaluating Text-to-Spatial SQL Models</b><br/>         Thai Hung Vo (Academy of Military Science and Technology, Vietnam); Thanh Chi Nguyen (Institute of Military Science and Technology, Hanoi, Vietnam); Le Thi Thu Hong (Military Institute of Science and Technology &amp; MIST, Vietnam)</p> <p><b>HART: Hardware-Aligned Robust Training for Resource-Constrained Edge Device</b><br/>         Chao-Wei Chang, Ya-Chi Peng, Yun-Hao Yang, Wan-Jung Chen and An-Yeu Wu</p> | <p><b>Session R8: 5 papers/90 min</b><br/> <b>FPGA and Embedded Systems 2</b><br/> <b>Chairs:</b></p> <p><b>FPGA-based CNN Accelerator for Low-Latency Object Detection Using an Enhanced Systolic Array</b><br/>         Luu Nguyen-Van (Hanoi University of Science and Technology, Vietnam); Nguyen D. Minh (HUST, Vietnam); Xuan Truong Nguyen (Seoul National University, Korea (South)); Dung Viet Do and Linh Nguyen-Thi-Thuy (Hanoi University of Science and Technology, Vietnam); Chi Hoang Phuong (HUST, Vietnam)</p> <p><b>MRCA 3.0: Concurrent Post-Quantum and INT8 AI Execution on a Multi-grained Reconfigurable Accelerator</b><br/>         Long Hau Huynh and Tung Lam Truong (Ho Chi Minh City University of Technology and Engineering, Vietnam); Hoai Luan Pham (NARA Institute of Science and Technology, Japan); Huan Minh Vo (Ho Chi Minh University of Technology and Engineering, Vietnam)</p> <p><b>Novel High-Speed Pedestrian Detection Using Motion Detection and Object Tracking to Support High-Resolution Video Stream on FPGA</b></p> |

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             | <p>(National Taiwan University, Taiwan); Mladen Berekovic (Universität zu Lübeck, Germany); Shih-Hsu Huang (Chung Yuan Christian University, Taiwan)</p> <p><b><i>RAFT-SF: Risk-Aware Formation Planning with Safety Filtering for UAV Swarms</i></b><br/>Duong Van Dan and Thanh Ta Minh (Le Quy Don Technical University, Vietnam)</p> <p><b><i>APEG-QIM: Blind Quantum Image Watermarking with Block-Size Optimization for Robustness</i></b><br/>Tuat Dao Ngoc (Thai Nguyen University of Information and Communication Technology, Vietnam); Thanh Ta Minh (Le Quy Don Technical University, Vietnam); Trung-Nghia Phung (Thai Nguyen University of Information and Communication Technology, Vietnam)</p> <p><b><i>Low-Cost Real-Time 3D Environment Perception Using Monocular Depth Estimation on Edge NPU</i></b><br/>Quoc-Dat Tran and Duy-Hieu Bui (Vietnam National University, Hanoi, Vietnam); Xuan-Tu Tran (Vietnam National University, Hanoi, Vietnam)</p> | <p>Tuan-Phong Tran (Phenika University, Vietnam); Nam Van Dinh (Phenikaa University, Vietnam); Duy-Hieu Bui (Vietnam National University, Hanoi, Vietnam); Xuan-Tu Tran (Vietnam National University, Hanoi, Vietnam)</p> <p><b><i>Predicting Feasibility and Runtime of Randomized PCA-SVD on Single-Board Computers</i></b><br/>Le Tien Hung, Nguyen Le Van and Nguyen Huu Tho (Le Quy Don Technical University, Vietnam)</p> <p><b><i>Radar Pulse Descriptor Word Extraction on RFSoc</i></b><br/>Hoang-Gia Vu and Viet-Anh Nguyen-Van (Le Quy Don Technical University, Vietnam); Tuan Khang Nguyen (Center 80 of Electrical Engineerings, Vietnam); Nguyen Tuan (Le Quy Don Technical University, Vietnam)</p>                                                                                                                                                                                                             |
| 11:50-13:10 | Lunch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 13:30-14:05 | <p><b>Keynote 5: “Hardware Accelerator Design and Optimization for Functional Encryption”</b><br/><i>Prof. Makoto IKEDA, Systems Design Lab (D.lab), Engineering School, The University of Tokyo, Japan</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 14:05-15:35 | <p><b>Session R9:</b> 5 papers/90 min<br/><b>AI, IoT &amp; Communications 2</b><br/><b>Chairs:</b></p> <p><b><i>An Efficient Edge-Device Implementation of 2D ECG Classification Based on the Stockwell Transform and Lightweight Swin Transformer</i></b><br/>Thanh-Bao Ho, Minh-Thien Nguyen and Minh-Quang Nguyen (HCMUS, Vietnam); Huu-Thuan Huynh (Ho Chi Minh City - University of Science, Vietnam)</p> <p><b><i>Codebook-Based Synaptic Weight Compression for Spiking Neural Networks</i></b><br/>Atharv Sharma and Khanh N. Dang (University of Aizu, Japan)</p> <p><b><i>Improving Hyperdimensional Regression Through Encoder Redesign and Data Augmentation</i></b><br/>Sy-Quyen Nguyen (Le Quy Don Technical University, Vietnam); Thi-Nhan Pham (Hanoi University of Science Technology,</p>                                                                                                                                                                 | <p><b>Session R10:</b> 4 papers/72 min<br/><b>Analog/Mixed-Signal Circuits 2</b><br/><b>Chairs:</b></p> <p><b><i>Adaptive Coincidence Detection with Ambient Photon Statistics for Noise Filtering of d-SiPM-based d-ToF Sensor</i></b><br/>Lei Shao, Derun Li and Jianping Guo (Sun Yat-sen University, China)</p> <p><b><i>Foreground Digital Calibration Technique for 14-bit ADC Design Used in PNN Prototyping</i></b><br/>L S S Pavan Kumar Chodiseti (National Sun Yat-Sen University, Taiwan); Yen-Jung Lin (National Sun Yat-sen University, Taiwan); Pradyumna Vellanki (National Sun Yat-Sen University, Taiwan); U-Fat Chio (Chongqing University of Posts and Telecommunications, China); Friedel Gerfers (Technical University Berlin, Germany); Chua-Chin Wang (National Sun Yat-Sen University, Taiwan)</p> <p><b><i>Fully Integrated Inductorless Charge Pump for Energy Harvesting Down to 125 mV</i></b></p> |

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             | <p>Vietnam); Quang-Manh Duong, Thi-Nga Dao and Kien Trinh Quang (Le Quy Don Technical University, Vietnam)</p> <p><b><i>Mamba-MK: An Implementation of Mamba Decoding Using a Cooperative Megakernel on Consumer and Edge GPUs</i></b><br/>Trinh Thi My Linh (Hanoi University of Science and Technology, Vietnam); Chi Hoang Phuong (HUST, Vietnam); Xuan Truong Nguyen (Seoul National University, Korea (South)); Nguyen D. Minh (HUST, Vietnam)</p> <p><b><i>A lightweight multi-channel CNN for low-latency automatic modulation classification with over-the-air SDR validation</i></b><br/>Duong Van Minh (Le Quy Don Technical University, Vietnam &amp; University of Defence, Czech Republic); Giang Phan, Phuong Nguyen, Nguyen Van Dat, Nguyen Van Toi and Pham Trong Hung (Le Quy Don Technical University, Vietnam)</p>                                                                                                                                                                                                                   | <p>Lucas Ott (Technische Universität Dresden, Germany); Jens Wagner (Technische Universität Dresden &amp; Chair for Circuit Design and Network Theory, Germany); Florian Protze and Frank Ellinger (Technische Universität Dresden, Germany)</p> <p><b><i>Co-optimized biasing and ADC architecture for substrate temperature compensation in uncooled IR ROICs</i></b><br/>Duong Huu-Truong (Vietnam National University Hanoi, Vietnam); Minh-Tuan Nguyen (VNU University of Engineering and Technology, Vietnam); Mai-Huong Nguyen Thi (Vietnam National University Hanoi, Vietnam); Linh Mai (University of Engineering and Technology, VNU-Hanoi &amp; UET, Vietnam); Tuan Anh Mai (VNU University of Engineering and Technology, Vietnam)</p>                                                                                                                                                                                                                                                                                                                                                                                       |
| 15:35-15:55 | <b>Coffee break &amp; Expo</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 15:55-17:25 | <p><b>Session R11:</b> 5 papers/90 min<br/><b>Semiconductor Technology</b></p> <p><b><i>Multi-Cell TCAD Analysis of Parasitic-Bipolar-Effect-Induced Multiple-Cell Upsets in a 12-nm FinFET SRAM</i></b><br/>Ryuichi Yasuda (Kyoto University, Japan); Koichi Fukuda and Junichi Hattori (National Institute of Advanced Industrial Science and Technology, Japan); Kozo Takeuchi (Japan Aerospace Exploration Agency, Japan); Yuibi Gomi and Masanori Hashimoto (Kyoto University, Japan)</p> <p><b><i>Phase-Informed Machine Learning for In-Sn-Cu Low-Temperature Solder Alloys: CALPHAD Augmentation, Gaussian Process Regression With Physics, and SHAP-Derived Design Rules</i></b><br/>Anh The Vu (Hanoi University of Science and Technology, Vietnam); Chau Van Tran (Le Quy Don Technical University, Vietnam); Han Le Duy (Hanoi University of Science and Technology, Vietnam)</p> <p><b><i>Device-Aware Design and Evaluation of an Ancilla-Assisted Photonic CZ Gate Using Real Mach-Zehnder Interferometer Transfer Matrices</i></b></p> | <p><b>Session R12:</b> 4 papers/72 min<br/><b>Hardware Security and Cryptography 2</b></p> <p><b><i>An Efficient SoC-FPGA Based Architecture for the Latest ASCON Lightweight Cryptography with Hardware-Software Co-Design</i></b><br/>Minh-Thien Nguyen (HCMUS, Vietnam); Bao Thuong T Cao (University of Science, VNU-HCM, Vietnam); Thanh-Bao Ho and Minh-Quang Nguyen (HCMUS, Vietnam); Cong-Kha Pham (University of Electro-Communications (UEC), Japan); Huu-Thuan Huynh (Ho Chi Minh City - University of Science, Vietnam)</p> <p><b><i>An FPGA-Based ECDSA P-256 Key Generation Accelerator with Integrated TRNG</i></b><br/>Phuc-Phan Duong (The University of Electro-Communications, Japan); Thanh Ngoc and Hieu Minh Nguyen (Academy of Cryptography Techniques, Vietnam); Trong-Thuc Hoang (The University of Electro-Communications, Japan); Ngoc-Quynh Chu-Thi (Academy of Cryptography Techniques, Vietnam)</p> <p><b><i>Application - Specific Integrated Circuit (ASIC) Implementation of Blowfish Algorithm with Optimized Round and S - Box for Enhanced Performance Using Skywater 130 nm CMOS Process</i></b></p> |

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             | <p>Vu Le Ha (Academy of Science and Technology for Military, Vietnam); Hong Thu Thi Luu (Institute of Electronics, Vietnam); Thanh Cong Pham and Thai Nguyen (AMST, Vietnam)</p> <p><b><i>A Line-Based Adaptive Body-Bias Framework for Low-Power SRAM in 22FDX Technology</i></b><br/>Lingfan Zhang (Nanyang Technological University, Singapore); Bah Hwee Gwee (NTU, Singapore)</p> <p><b><i>Physics-Guided Latent-Space Enhancement for Lift-off-Robust Pulsed Eddy Current Corrosion Imaging</i></b><br/>Ngo Tung Duong, Ba Long Nguyen, Thang Nguyen Trong and Pham Phuong Huy (Phenikaa University, Vietnam)</p> | <p>Agustin G. Carillo, Rommel J. Gumata and Re-Ann Cristine O. Calimpusan (Caraga State University, Philippines); Anastacia B Alvarez (University of the Philippines Diliman, Philippines); Angelo T. Batausa (Caraga State University, Philippines)</p> <p><b><i>FPGA-Based Hardware/Software Co-Design for Modular Reduction and Polynomial Vector Arithmetic in Dilithium scheme</i></b><br/>Nhu-Quynh Luc, Phan Cong-Tien-Doan, Nguyen Hai-Long and Nguyen Gia-Bao (Academy of Cryptography Techniques, Vietnam); Thang Nguyen and Toan Dao (University of Transport and Communications, Vietnam)</p> |
| 17:25-17:35 | Closing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|             | <b>Oct. 10</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 9:30-11:00  | Committee Meeting                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 12:00-18:00 | Field trip                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

**Conference venue:** 5F, S1 building, Le Quy Don Technical University, 236 Hoang Quoc Viet str., Nghia Do ward, Hanoi, Vietnam

Total talks: 65 (05 keynotes + 03 invited papers + 57 regular papers)