

# FCCM Best Paper Awards

The IEEE International Symposium on Field-Programmable Custom Computing Machines (FCCM) has awarded Best Paper Awards to the following papers:

## 2025, Fayetteville, AR

### [Guaranteed Yet Hard to Find: Uncovering FPGA Routing Convergence Paradox](#)

Shashwat Shrivastava, Stefan Nikolić, Sun Tanaka, Chirag Ravishankar, Dinesh Gaitonde and Mirjana Stojilovic

## 2024, Orlando, FL

### [A Data-Driven, Congestion-Aware and Open-Source Timing-Driven FPGA Placer](#)

#### [Accelerated by GPUs](#)

Zhili Xiong, Rachel Selina Rajarathnam and David Z. Pan

*Best Short Paper:* [Synthesis of LUT Networks for Random-Looking Dense Functions with](#)

### [Don't Cares - Towards Efficient FPGA Implementation of DNN](#)

Yukio Miyasaka, Alan Mishchenko, Nicholas Fraser and John Wawrzynek

## 2023, Marina Del Rey, CA

### [A Machine Learning Approach for Predicting the Difficulty of FPGA Routing Problems](#)

Andrew David Gunter and Steven J.E. Wilton

*Best Paper Runner Up:* [LightningSim: Fast and Accurate Trace-Based Simulation for High-](#)

#### [Level Synthesis](#)

Rishov Sarkar and Cong Hao

## 2022, New York City, NY

### [CoMeFa: Compute-in-Memory Blocks for FPGAs](#)

Aman Arora, Tanmay Anand, Aatman Borda, Rishabh Sehgal, Bagus Hanindhito, Jaydeep Kulkarni and Lizy K. John

## 2021, Virtual Conference

## **[Clockwork: Resource-Efficient Static Scheduling for Multi-Rate Image Processing](#)**

### **[Applications on FPGAs](#)**

Dillon Huff, Steve Dai and Pat Hanrahan

*Best Short Paper:* **[ESCA: Event-Based Split-CNN Architecture with Data-Level Parallelism on UltraScale+ FPGA](#)**

Pankaj Bhowmik, Jubaer Hossain Pantho, Joel Mandebi Mbongue and Christophe Bobda

## 2020, Virtual Conference

### **[Comparison of Arithmetic Number Formats for Inference in Sum-Product Networks on FPGAs](#)**

Lukas Sommer, Lukas Weber, Martin Kumm and Andreas Koch

*Best Short Paper:* **[Yosys+nextpnr: an Open Source Framework from Verilog to Bitstream for Commercial FPGAs](#)**

David Shah, Eddie Hung, Clifford Wolf, Serge Bazanski, Dan Gisselquist and Miodrag Milanovic

## 2019, San Diego, CA

### **[Templatized soft floating-point for High-Level Synthesis](#)**

David B. Thomas

## 2018, Boulder, CO

### **[ReBNet: Residual Binarized Neural Network](#)**

Mohammad Ghasemzadeh, Mohammad Samragh and Farinaz Koushanfar

*Best Short Paper:* **[Fast and Accurate Estimation of Quality of Results in High-Level Synthesis with Machine Learning](#)**

Steve Dai, Yuan Zhou, Hang Zhang, Ecenur Ustun, Evangeline F.Y. Young and Zhiru Zhang

## 2017, Napa, CA

### **[High-Performance Hardware Merge Sorter](#)**

Susumu Mashimo, Thiem Van Chu and Kenji Kise

*Best Short Paper:* **[Evaluating Rapid Application Development with Python for Heterogeneous Processor-based FPGAs](#)**

Andrew G. Schmidt, Gabriel Weisz and Matthew French

## 2016, Washington DC

### [\*\*KAPow: A System Identification Approach to Online Per-module Power Estimation in FPGA Designs\*\*](#)

Eddie Hung, James J. Davis, Joshua M. Levine, Edward A. Stott, Peter Y.K. Cheung and George A. Constantinides

*Best Short Paper:* [\*\*GRVI Phalanx: A Massively Parallel RISC-V FPGA Accelerator Accelerator\*\*](#)  
Jan Gray

## 2015, Vancouver, Canada

### [\*\*Using Dynamic Signal-Tracing to Debug Compiler-Optimized HLS Circuits on FPGAs\*\*](#)

Jeffrey Goeders and Steve J.E. Wilton

## 2014, Boston, MA

### [\*\*Speeding Up FPGA Placement: Parallel Algorithms and Methods\*\*](#)

Matthew An, J. Gregory Steffan and Vaughn Betz

## 2013, Seattle, WA

### [\*\*Parallel Computation of Skyline Queries\*\*](#)

Louis Woods, Gustavo Alonso and Jens Teubner

## 2012, Toronto, Canada

### [\*\*Hardware Acceleration of Short Read Mapping\*\*](#)

Corey B. Olson, Maria Kim, Cooper Clauson, Boris Kogon, Carl Ebeling, Scott Hauck and Walter L. Ruzzo

## 2011, Salt Lake City, UT

### [\*\*Multilevel Granularity Parallelism Synthesis on FPGAs\*\*](#)

Alexandros Papakonstantinou, Yun Liang, John A. Stratton, Karthik Gururaj, Deming Chen, Wen-Mei W. Hwu and Jason Cong

## 2010, Charlotte, NC

### [\*\*Hardware Acceleration of Approximate Tandem Repeat Detection\*\*](#)

Tomáš Martínek and Matej Lexa

## **Rapid RNA Folding: Analysis and Acceleration of the Zuker Recurrence**

Arpith C. Jacob, Jeremy D. Buhler and Roger D. Chamberlain

---

Revision #6

Created 18 September 2024 10:27:37 by Suhaib Fahmy (Admin)

Updated 24 July 2025 15:05:44 by Suhaib Fahmy (Admin)