DESIGN, AUTOMATION AND TEST IN EUROPE

DATE 22

THE EUROPEAN EVENT FOR ELECTRONIC SYSTEM DESIGN & TEST

CONFERENCE ONLINE EVENT

14 – 15 MARCH 2022
KEYNOTES, TALKS & PANELS

16 – 23 MARCH 2022
D, A, T & E TRACKS
KEYNOTES, TALKS & PANELS
WORKSHOPS, TUTORIALS
YOUNG PEOPLE PROGRAM
MULTI-PARTNER PROJECTS
ASD INITIATIVE, DivEDA

Interested in Quantum and Neuromorphic Computing? Join us at DATE 2022!

Cryo-CMOS Quantum Control: from a Wild Idea to Working Silicon

March 14 10:10

Keynote speaker: Edoardo Charbon, EPFL, CH

The core of a quantum processor is generally an array of qubits that need to be controlled and read out by a classical processor. This processor operates on the qubits with nanosecond latency, several millions of times per second, with tight constraints on noise and power. This is due to the extremely weak signals involved in the process that require highly sensitive circuits and systems, along with very precise timing capability. We advocate the use of CMOS technologies to achieve these goals, whereas the circuits will be operated at deep-cryogenic temperatures. We believe that these circuits, collectively known as cryo-CMOS control, will make future qubit arrays scalable, enabling a faster growth in qubit count.

Scalable quantum stacks: current status and future prospects

March 14 11:00

We explore quantum computing from the quantum algorithm to the qubit, going through the compilation process. In this context, we look at similarities with conventional computing in the overall quantum stack architecture and differences in the control of qubit processors. From these and other perspectives, the session will offer a view into the future of quantum computers.

Organizer: Edoardo Charbon, EPFL, CH
Speakers:
Carmen G. Almudever, Universitat Politècnica de València, ES
Bruno Schmitt, EPFL, CH
Kevin Tien, IBM Research, US

Quantum Software Toolchain — Panel

March 14 16:30

Today's quantum software toolchains are integral to system-level design of quantum computers. Compilers, system software, qubit simulators, and other software tools are being used to develop and execute quantum workloads and drive architectural research and design of both software and hardware. In this session, industry experts cover the latest software research and development for quantum computing systems.

Organizers & moderators: Aida Todri-Sanial, LIRMM, FR — Anne Matsuura, Intel, US
Panelists:
Xin-Chuan (Ryan) Wu, Intel Labs, US
Ali Javadi-Abhari, IBM, US
Ross Duncan, Cambridge Quantum, UK
Carmen G. Almudéver, Universitat Politècnica de València, ES

Quantum Hardware — Panel

March 15 09:00

A panel to highlight recent advancements in qubits and qubit control. Industrial and academic experts present that latest hardware development for quantum computing from materials and qubit devices to qubit control systems.

Organizers & moderators: Aida Todri-Sanial, LIRMM, FR — Anne Matsuura, Intel, US
Panelists:
Lieven Vandersypen, Technische Universiteit Delft, NL
Steven Brebels, IMEC, BE
Lotte Geck, Forschungszentrum Jülich, DE
Heike Riel, IBM, CH

Designing Brain-Inspired Chips — Panel

March 17 17:30

Invited speakers from industry and academia will cover aspects from neuro-inspired computing chips, neuromorphic engineering, photonics to organic electronics for neuromorphic computing.

Organizers & moderators: Aida Todri-Sanial, LIRMM, FR — Anne Matsuura, Intel, US
Panelists:
Bhavin J. Shastri, Queen's University, CA
Giacomo Indiveri, ETH Zürich, CH
Mike Davies, INTEL, US

What's it like to be an Engineer for Emerging Computing Technologies? — Panel

March 22 12:30

Four neuromorphic and quantum engineers will share their experiences on becoming engineers and working for emerging computing technologies. After the opening statements, the floor will be opened for discussions and exchange with the moderator and audience.

Organizers & moderators: Aida Todri-Sanial, LIRMM, FR — Anne Matsuura, Intel, US
Panelists:
Fernando Gonzalez-Zalba, Quantum Motion, UK
Théophile Gonos, A.I. Mergence, FR
Robert Wille, Johannes Kepler University Linz, AT

LIVE INTERACTIVE TALKS AND PANELS

more information and registration:
https://www.date-conference.com/