Efficient Computing and Communication for Low-Latency Applications (ECCLA2026)

Exeter, United Kingdom, 26-28 October, 2026 IUCC site: https://hpcn.exeter.ac.uk/iucc2026

IUCC Workshop ECCLA2026 submission site: https://hpcn.exeter.ac.uk/eccla/

Call For Papers

Emerging low-latency applications such as vehicle-to-everything (V2X) communications, industrial automation, extended reality (XR), and remote control systems are rapidly reshaping next-generation intelligent infrastructures. These applications require highly efficient data processing, stringent end-to-end latency guarantees, and real-time responsiveness in dynamic and resource-constrained environments. Realizing these requirements critically depends on advances in efficient computing, communication, and signal processing techniques across a broad range of wireless system paradigms. On the computing and networking side, this involves fast and scalable processing pipelines, efficient task execution, and intelligent resource management in edge and distributed systems. On the communication side, it requires highly efficient protocols, adaptive transmission strategies, and low-overhead network designs that can operate under strict delay constraints. Emerging technologies such as smart radio environments (SRE), integrated sensing and communication (ISAC), and mobile edge computing (MEC) provide complementary capabilities that jointly address these challenges. **In particular, efficient cross-layer algorithm and system design that jointly optimize computation, communication, and networking is becoming a key enabler for next-generation low-latency wireless systems.** Across all layers and architectures, such efficient designs are essential to overcome latency bottlenecks and enable reliable real-time performance.

This workshop aims to bring together researchers and practitioners from academia and industry to present and discuss recent advances in theory, algorithms, architectures, and experimental systems for **efficient computing and communication in low-latency scenarios**. It seeks to foster cross-disciplinary exchange between wireless communications, networking, signal processing, optimization, and distributed computing communities, with a particular emphasis on scalable and practically deployable solutions.

Topics of interest in this workshop include, but are not limited to:

- ✧ Efficient algorithms for low-latency wireless systems.
- ✧ Fluid antenna/movoble antenna-empowered communication and computing.
- ✧ Low-latency wireless systems with next-generation MIMO architecture.
- ✧ Joint optimization of communication, computation, and networking.
- ✧ Edge computing and MEC for real-time applications.
- ✧ SRE-enabled communication and computing optimization.
- ✧ ISAC for low-latency applications (e.g., V2V, V2X and XR).
- ✧ Resource allocation under strict delay constraints.
- ✧ Low-complexity wireless system designs.
- ✧ Task offloading and scheduling in distributed systems.
- ✧ Low-latency wireless protocols and MAC design.
- ✧ AI/ML for efficient computing and communication.
- ✧ Device and hardware for efficient computing.
- ✧ Scalable architectures for efficient communication.
- ✧ Experimental platforms and testbeds for low-latency systems.

We particularly encourage contributions that bridge theory and practice, including analytical models, algorithmic innovations, system prototypes, and experimental validations.

Paper Submission Guide:

All papers need to be submitted electronically with PDF format through the conference submission website (https://hpcn.exeter.ac.uk/eccla/).

The materials presented in the papers should not be published or under submission elsewhere. Each paper is limited to 8 pages (or 10 pages with over length charge) including figures and references using IEEE Computer Society Proceedings Manuscripts style (two columns, single-spaced, 10 fonts).

All accepted papers will be submitted for possible inclusion to Xplore, subject to meeting IEEE's scope and quality requirements and submitted to indexers such as EI. At least one of the authors of any accepted paper is requested to register the paper at the conference.

ECCLA2026 Workshop Chairs:

Dr.-Ing. Xiaopeng Yuan, RWTH Aachen University, Germany.
Dr.-Ing. Kangda Zhi, Technical University of Berlin, Germany.

Important Dates: Submission deadline: 10 July 2026 Notification: 30 August 2026 Registration: 30 Sept 2026