16TH ITU ACADEMIC CONFERENCE

ITU KALEIDOSCOPE
GENEVA2026

AI and frontier technologies for Good

7-10 July 2026
Geneva, Switzerland

CALL FOR PAPERS

Hosted by AI for Good Global Summit

ITU KALEIDOSCOPE
GENEVA 2026

Kaleidoscope 2026: AI and frontier technologies for Good *is the sixteenth edition of ITU's flagship peer-reviewed academic conference, bringing together leading voices from universities, industry, and research institutions worldwide. The conference provides a unique platform to exchange ideas, establish collaboration, share cutting-edge research, and propose practical solutions that make frontier technologies more accessible, inclusive, and sustainable.*

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Theme

AI and frontier technologies for Good is the theme of the sixteenth edition of the ITU Kaleidoscope academic conference. The goal is to capture the global efforts to harness the power of frontier technologies for positive and sustainable change, in general and for telecommunications, in particular.

Kaleidoscope 2026 welcomes contributions that delve into cutting-edge research for these transformative technologies in the area of telecommunications. In particular, how Artificial Intelligence (AI), quantum technologies and others still in the research phase can facilitate the management and operation of networks. These include network optimization, cell site development and enhanced cybersecurity. Another important goal is to investigate how these new technologies can help achieve the goal of sustainable development.

By connecting researchers, practitioners, and policymakers, Kaleidoscope 2026 aims to pioneer sustainable, inclusive, ethical, and digital futures — recognizing that our futures are deeply entwined across technologies, societies, and environments.

Objective

Kaleidoscope 2026 invites multidisciplinary, original research proposals that explore how frontier technologies, including **AI**, **brain–computer interface, embodied AI, autonomous driving**, **geospatial** and **quantum information technologies interface with telecommunications.** We welcome submissions across **three major tracks**. The first is about the **technical innovations** themselves. The second is about **applications and services** built around these innovations. The third concerns the **socioeconomic** impact of these technologies and services, the **policies** that should be developed to ensure sustainable development and the **ethical considerations** that should guide all the participants. We encourage submissions that demonstrate transformative potential, contribute to the design and adoption of international standards, and propose innovative solutions that are ethically grounded, globally inclusive, and future ready.

Audience

Professors and academic researchers; students and early career researchers at all levels - from undergraduate to postdoctoral; industry R&D teams and innovators; start-ups working at the intersection of emerging tech; policy experts and social scientists.

Date and venue

7 – 10 July 2026, hosted by the AI for Good Global Summit 2026

Submission guidelines

Kaleidoscope 2026 welcomes submissions of original research papers using the template available on the conference's website. All papers, full and short types, will go through a double-blind peer review process. Selected full papers will be presented in plenary, while selected short papers will be presented in poster sessions. Submissions must be made electronically via EDAS: see http://itu.int/go/K-2026 for more details. Paper proposals will be evaluated according to content, originality, clarity, relevance to the conference's theme and, in particular, **significance to future standards and policy**.

Paper types

Full paper (6-8 pages)
Short paper (2-4 pages)

Deadlines

Submission of full paper proposals: **15 December 2025**
Notification of paper acceptance: **16 March 2026**
Submission of camera-ready accepted papers: **13 April 2026**

Publication and presentation

Accepted and presented papers will be published in the Kaleidoscope Proceedings. In addition, extended versions of selected papers might be considered for publication in a special edition of the ITU Journal on Future and Evolving Technologies (ITU J-FET) .

Awards

The authors of the three best papers, as selected by the Scientific and Technical Programme Committees, will be honoured with special awards. In addition, young authors of up to 30 years of age presenting accepted papers will receive Young Author Recognition certificates.

Keywords

Artificial intelligence, machine learning, embodied AI, generative AI, robotics, human-computer interaction, quantum computing, quantum networks, quantum sensing, geospatial information, geospatial AI, digital twin earth, metaverse, future mobile and wireless networks, regulation, security and privacy, education

Suggested (non-exclusive) list of topics

Track 1
Frontier technological bases in intelligent and resilient network infrastructures

- The role of machine learning to artificial intelligence in network architecture, design, operation and maintenance, for example
  - The role of AI/ML in existing and future communication networks infrastructures (6G and beyond)
  - Improved tools for network orchestration and traffic management
- Large Language Models (LLM), Small Language Models (SLM) and Learning Model in telecommunications, for chip design and cloud computing and research at the interface of ML and quantum computing
- New system architectures for extended reality (XR), digital twin earth, metaverse, and immersive Live Experience (ILE)
- Quantum information technologies for hybrid architectures and secure network protocols
- Design and implementation technologies for hybrid architectures and scalable quantum networks
- Transition strategies and integration of quantum-safe technologies (i.e, post –quantum cryptography and quantum key distributions) into existing networks
- Neuromorphic computing and new chip designs

Track 2
Applications and services for sustainable development

- Planning and introduction of radiocommunication networks (protocol design, verification, implementation, conformance, testing, etc)
- Network modelling, optimization, management, monitoring and maintenance (QoS, QoE, network and user security)
- Cybersecurity of network and users, privacy protection, and trust establishment in decentralized and distributed systems
- Smart transportation autonomous driving and urban mobility
- Embodied AI applications including healthcare (telemedicine, rehabilitations, assistive robotics, and assistance for the aging)

- Geospatial foundation models applications, design and development
- Location-based services and spatial registration technologies
- Sustainable smart cities and communities
- Applications of quantum technologies
- Sustainable online education, rural access and the role of AI in learning

Track 3
Social, economic, environmental and policy dimensions of AI and frontier technologies

- AI regulations, governance and ethical considerations
- Policy frameworks for safe and ethical AI development
- Ethical frameworks for responsible quantum and AI development
- Standards and regulations for sustainable development
- Intellectual property rights in the AI era
- Waste management, healthcare, environmental protection
- Societal implications of brain-computer interfaces and neurotechnology
- Leveraging AI and quantum technologies to advance research
- Quantum education: curriculum development, tools and access

Scientific Committee

Maria Antonia Brovelli, Politecnico di Milano, Italy

Christoph Dosch, Former Chairman of ITU-R Study Group 6; ARD, Germany

Emily Edwards, Duke University, United States

Martin Gastal, CERN

Eva Ibarrola, University of the Basque Country, Spain

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Vishnu Ram OV, Independent Consultant, India

Mostafa Hashem Sherif, Consultant, United States

Hao Qin, National University of Singapore, Singapore

Technical Programme Committee

Mostafa Hashem Sherif, Consultant, United States

The Technical Programme Committee is composed of international subject-matter experts. Details will be available shortly at http://itu.int/en/ITU-T/academia/kaleidoscope/2026/Pages/progcom.aspx

Additional information

For additional information, please visit the conference website: http://itu.int/go/K-2026

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