

CALL FOR PAPERS

1st International Workshop on Fostering a Human-Centered, Trustworthy and Sustainable Internet (TRUSTCHAIN 2024)

**in conjunction with the 7th IEEE International Conference on Blockchain (Blockchain 2024)
Copenhagen, Denmark**

Scope and Topics of Interest

Multiple threats related to truthfulness, trust and identity (ID) have been identified when people interact online: delusion and manipulation, personal privacy violation & personal data exploitation, unknown provenance of information, anonymity in favour of criminal activities, biases in AI algorithms, spread of fake news, disinformation in social media platforms, skills mismatches, serious breaches of security to mention a few. Moreover, the spirit of the first-generation Internet based on individual freedom, material progress, and moral community is slowly turning to individualism, materialism, and amorality, diverging also from essential ethical and democratic principles that should underline this technology. The key hypothesis investigated by this workshop is that the emergence of Internet of Things (IoT), Artificial Intelligence (AI), Cloud-to-Edge computing, Distributed Ledger (DLT) and Digital Twin (DT) technologies, and their proper use, can address the need to build democratic systems without central point of control that can establish the missing link between our common perception of objective truth in the physical world, and the digital representation of the reality. Our vision is to contribute to the emergence of Next Generation Internet protocols, methods, technologies and tools that would allow people to establish trusted relationships based on their respect for human-rights, the environment, sustainability, energy-efficiency. This may provide technological support for the emergence of new trustworthy ecosystems that may expand to the society as a whole. Specific research may relate to the application of various consensus protocols that associate proofs with digital representations and thus help humans understand the objective truth, achieve trusted relations on the Internet, and consequently undertake well-informed decisions, being manual or automated. Distributed Ledger Technologies (DLTs) and especially Blockchain has the potential to shape in a decentralised manner, a greener, more secure and resilient digital future and fundamentally transform our global society whether socially, environmentally, culturally and economically. Most importantly, it can respond to the current needs of our society in terms of identity, privacy, trust, security and user centric control of their digital personas to create a digital human that can seamlessly create, share and port their digital footprints safely and securely in a trustworthy manner.

Topics of interest include, but are not limited to, the following:

- Decentralised user-centric identity management framework for supporting an automated privacy preserving, legal and regulatory compliant infrastructure (e.g., GDPR) potentially in alignment with emerging European regulations and standards (i.e. eIDAS);
- Protocols for trustworthiness assessment of entities by means of verifiable credentials and decentralized reputation systems;

- Smart oracles assessing the trustworthiness of data associated with digital identities;
- Inclusive digital identity platforms focusing on marginalized communities (e.g., refugees, elderly, vulnerable);
- Social identity for delegation and recovery that drives community-based trust establishment (i.e., social guardians);
- Systems considering both public and private administration roles in issuing and managing decentralized identifiers;
- Decentralized identity systems supporting Decentralized Authority Organizations (DAOs);
- Use-case driven identity management system deployment (e.g., banking, publishing, healthcare, education etc);
- Enhanced Consent profiles to implement transparent and user-friendly consent mechanisms that clearly explain how user data will be collected, used, and shared;
- Secure data exchange and privacy-aware data processing solutions;
- Data identification, data provenance, data tracking mechanisms so that the data that is exchanged can be traced;
- Tokenization of assets and its fair trading, protection against scams such as rug pulls, initial coin offering (ICO) fraud in digital asset trading;
- Privacy-aware decentralized market mechanisms and privacy-aware transactions;
- Fair data marketplaces: publish, search, discovery, other mechanisms in decentralized environments; negotiation mechanisms for data prices;
- Decentralized trustworthy governance solutions including asset management;
- Cross-chain interoperability and portability solutions;
- Blockchain-based Next Generation Internet (NGI) protocols;
- Mechanisms that appropriately balance greenness and trustworthiness of blockchain;
- Blockchain mechanisms that enable otherwise-untenable sustainable goals;
- Studies (qualitative or/and quantitative) on the needs and barriers for different communities of users for blockchain technologies;
- Successful case studies of user-centric methodological approaches (co-creation, piloting and validation) of blockchain solutions with demonstrable impact on the adoption of these technologies.

Description of the workshop

The Workshop will be organized over a full-day aiming to bring together scientists, industrialists, policy makers and regulators that work in various aspects towards the realization of a human-centered, trustworthy and sustainable Internet. We plan to accept a small number of papers (around 8 at most) for oral presentations and have thematic panel sessions to discuss emerging socio-technical and policy issues. We envision to make this workshop one of the primary targets for the work around trustworthy, privacy-aware, decentralized Internet and its related problems. In addition, we plan to hold this workshop annually to keep the momentum and help to further transform this area of research.

The workshop complements IEEE Blockchain in a number of ways: a) We focus on the aspects of a human-centred, democratic, trustworthy, privacy-friendly and economically fair Next Generation Internet (NGI). b) We aim to attract interest from research communities that work on emerging participatory sensing applications.

Workshop Chair

Thanasis Papaioannou, National and Kapodistrian University of Athens, Greece, atpapaioannou@uoa.gr

Program Co-chairs

Vlado Stankovski, University of Ljubljana, Slovenia, vlado.stankovski@fri.uni-lj.si

Raj Rajarajan, City University of London, UK, r.muttukrishnan@city.ac.uk

Vasilios Siris, Athens University of Economics and Business, Greece, vsiris@aueb.gr

TPC Members

Waqar Asif, University of West London, UK

Ben Azvine, BT Group UK

Chithra Balamurugan, InTrust Labs, India

Caroline Barelle, European Dynamics S.A., Luxemburg

Sujit Biswas, City, University of London, UK

Bruno Bogaz Zarpelão, State University of Londrina, Brazil

Anupam Chattopadhyay, Nanyang Technological University, Singapore

Andres del Alamo, Ciber Voluntarios, Spain

Theodosios Dimitrakos, Huawei technologies Duesseldorf GmbH & University of Kent

Stefan Dziembowski, University of Warsaw, Poland

Fadiali El-Moussa, BT Group, UK

Spyros Galanis, Durham University, UK

Petar Kochovski, University of Ljubljana, Slovenia

Spyros Kountouris, European Dynamics S.A., Greece

Michal Krol, City University of London, UK

Rongxing Lu, University of New Brunswick, Canada

Di Ma, University of Michigan-Dearborn, USA

Weizhi Meng, Technical University of Denmark, Denmark

Hassan Qureshi, National University of Sciences and Technology, Pakistan

Yogachandran Rahulamathavan, Loughborough University London, UK

Etienne Riviere, UC Louvain, Belgium

Sushmita Ruj, University of New South Wales, Australia

George D. Stamoulis, Athens University of Economics and Business, Greece
Pablo Vela, Alastria Association, Spain

Important dates

Submission Deadline: May 20, 2024

Author Notification: June 4, 2024

Camera-ready and Registration: June 15, 2024

Conference Date: August 19-22, 2024

Submission Instructions

All papers need to be submitted electronically through the EDAS website (<https://edas.info/N32361>) with PDF format. Submitted papers must not substantially overlap with papers that have been published or that are simultaneously submitted to a journal or a conference with proceedings. Papers must be clearly presented in English, and must not exceed 6 pages in IEEE Computer Society proceedings format (or up to 8 pages with the pages over length charge), including tables, figures, references, and appendices. The limit length of accepted papers should be 6 pages with at most 2 extra page charge.

Papers will be selected based on their originality, significance, relevance, soundness of technology, and clarity of presentation assessed by at least three reviewers. All submitted papers will be judged through double-blind reviews, where the identities of the authors are withheld from the reviewers. As an author, you are required to preserve the anonymity of your submission, while at the same time allowing the reader to fully grasp the context of related past work, including your own. Papers that do not conform to our double-blind submission policies will be rejected without review.

Submission of a paper should be regarded as a commitment that, should the paper be accepted, at least one of the authors will register and attend the conference to present the work. IEEE Blockchain 2024 reserves the right to exclude a paper from distribution after the conference (e.g., removal from the digital library and indexing services), if the paper is not presented at the conference. All accepted papers will be published in IEEE CPS proceedings (EI Indexed) and collected by IEEE Xplore Digital Library.

Guidelines of Double-blind Submission

- Remove the names and affiliations of authors from the title page.
- Remove acknowledgments.
- Remove project titles or names that could be used to trace back to the authors via web search.
- Carefully name your files to anonymize author information.

- Carefully refer to related work, particularly your own. Do not omit references to provide anonymity, as this leaves the reviewer incapable of grasping the context. Instead, reference your past work in the third person, just as you would any other piece of related work by another author. For example, instead of "In prior work [1], we presented a scheme that ...," sentences in the spirit of "In prior work, Clark et al. [1] presented a scheme that ..." should be used. With this method, the full citation of the referred paper can still be given, such as "[1] A. Clark ..., "Analysis of ...", and it is not acceptable to say "[1] Reference deleted for double-blind review."
- The submitted manuscript or its title/abstract should not be posted on a public website, such as arxiv.org, or transmitted via public mailing lists.
- The submitted manuscript (PDF file) should be text-searchable. Any submission that does not meet this requirement may be returned without review.
- Many of the editing tools automatically add metadata to the generated PDF file containing information that may violate the double-blind policy. Please remove any possible metadata that can link your manuscript to you. This includes removing names, affiliations, license numbers, etc. from the Metadata as well as from the paper. Failing to meet this requirement may also lead to rejection without review.