

IEEE GLOBECOM Workshop on Information-Centric Edge Computing (ICEC) 9-13 December 2019; Waikoloa, HI, USA

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Scope and Topic List

Recent years have witnessed exponential growth of data traffic due to ubiquitous portable devices, Machine-to-Machine (M2M) communications, and novel user-centric applications such as augmented/virtual reality. In the meantime, the network infrastructure is in the process of transforming from a hardware-dominated landscape to an increasingly virtualized and software-defined system with storage and computation being offloaded to the edge/fog to reduce network traffic and latency, promote service elasticity and resource sharing, and alleviating the processing load on resource constrained devices. In a parallel effort, Information-Centric Networking (ICN) paradigm has been proposed, providing an alternative to traditional host-centric IP architecture. The recent discussions in the Future Internet Architecture community debated ICN as a perfect candidate for provider-agnostic distributed computation such as fog and edge computing. In ICN, computation can be executed remotely by any node in the network which supports the required compute capabilities which makes the client and the network agnostic of the list of providers and their corresponding IP mapping. The intersection of edge/fog computing and ICN, although compelling, poses new concerns including efficient offloading, security and privacy risks, service orchestration and sharing, and its economical dynamics in multi-stakeholder environments. Given the nascency of the information-centric edge computing domain, further exploration of this integration is imperative; in particular the opportunities and

challenges resulting from the need to support massive amounts of shared contents and processing, software defined architectures, virtualized network functions, and the emerging distributed technologies.

The IEEE ICEC workshop 2019 has the integration of edge/fog computing and ICN as the central theme, with focus on security vulnerabilities and privacy concerns, service and infrastructure virtualization, data and computation offloading, and economical aspects of resource. The ICEC workshop aims to serve as a place for the meeting of minds from the ICN, NFV, and SDN communities to explore effective integration. The workshop welcomes submissions from both researchers and practitioners from academia and industry that explore challenges and advances in architectures, algorithms, protocols, middleware, and technologies in the current Internet or in the future clean-slate Internet. We also encourage work-in-progress and position papers that describe highly original ideas, present new directions, or have the potential to generate insightful provocative discussions. The workshop invites submissions of unpublished work on the following topics (but not limited to):

- Architectures and protocols for edge/fog computing in future Internet architectures
- Trends and challenges of integrating edge computing in ICN
- Computation offloading in the future Internet
- Reliability and availability in information-centric mobile edge networks
- Trust management, security, and privacy in edge computing enabled ICN
- Accounting, access control, and integration of novel technologies, such as distributed ledger technology
- Security vulnerability assessment and novel attack vectors of edge computing in ICN
- Edge applications in challenged information-centric networks (e.g., disaster scenarios)
- Integration of software defined networking in information-centric networking edge
- Network function virtualization in an edge-enabled Internet architecture
- Service function chaining and orchestration in multi-access edge computing
- Optimizing edge infrastructures with SDN and NFV including hardware acceleration technologies
- Advanced tools for automated design, deployment, validation and management of edge computing
- Edge performance improvement, interoperability, and scalability studies
- Improvements in future communication infrastructure enabled by SDN and NFV including 5G, public, private and hybrid edge clouds
- Network slicing with mobile edge computing
- Industrial Internet-of-things and edge computing
- Economic landscape of edge/fog computing in a multi-stakeholder environment
- Pricing and billing in multi-tenant edge computing

Important dates

Deadline for submissions: June 30, 2019 (11:59 PM, EST)

Notification of acceptance: August 15, 2019

Camera-ready version: September 15, 2019

Workshop day: December 13, 2019

Submission

Technical papers will be presented in the full-day workshop. The authors are encouraged to submit original, unpublished, and proof-of-concept research, not currently under review by another conference or journal, addressing state-of-the-art research development to encourage conversations and suggestions from the community. All submissions should be written in English with a maximum paper length of six (6) printed pages (10-point font) including figures and references.

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You may also use one of the following templates for Microsoft word: A4, US letter. Only PDF files will be accepted for the review process, and all the submissions must be done through EDAS.

Submission Guideline: <https://globecom2019.ieee-globecom.org/authors/call-symposium-papers>

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