

Call for Papers

6th ACM Conference on Information-Centric Networking (ICN 2019) Sep. 24-26, 2019

Please note the revised and broadened focus of this CFP over those of previous years!

For additional information and submission instructions, please see the conference website at <https://conferences.sigcomm.org/acm-icn/2019/>

The organizing committee is delighted to invite you to submit your work for presentation at the 6th ACM conference on Information Centric Networking (ICN 2019), to be held in Hong Kong, SAR China, on September 24-26, 2019.

ACM ICN 2019 is a single-track conference focusing on significant research contributions to ICN as broadly defined, and featuring paper presentations, posters, and demonstrations.

The fundamental concept of Information Centric Networking (ICN) is to provide the ability to access, manage, and manipulate named entities as a principal service offered by the network, evolving the emphasis of network architecture and technology from today's packet-level delivery functions towards directly retrieving information objects and invoking services by name in a secure, resilient, scalable, and efficient way.

This architectural re-conception of networking aims to address the challenges that arise from, among other forces, the dramatic growth of mobile devices and edge computing, the emergence and wide deployment of Internet-of-things (IoT) technologies, rapidly increasing demand for cloud computing services and resources, and the continuing need to scale, stabilize, and secure the global Internet.

Previous successful research results have brought Information-Centric Networking concepts from early-stage academic effort to an increasingly sophisticated level of intellectual, technical, and practical maturity, offering the real promise of dramatic and tangible impact across the broad field of networking in the foreseeable future.

ACM ICN 2019 solicits research contributions across the full spectrum of objectives motivated by this observation, including work that advances core ICN concepts, technologies, and capabilities; extends current ICN concepts to new networking environments and use cases; realizes, demonstrates, and quantifies the benefits of ICN in traditional and emerging application domains; and catalyzes, incentivizes, simplifies, and supports ICN deployments in realistic, operational environments and settings.

Topics of Interest

ACM ICN 2019 seeks research contributions across the following broad topic areas:

Core ICN research

Research that advances key ICN concepts, algorithms, technologies, and capabilities, addressing topics in areas such as:

- Architectural Development, Refinement, and Extension:
 - Modularity, evolvability and extensibility of ICN architectures
 - Extension of ICN concepts to in-network computation and service provision
 - Strategies to support efficient device and content mobility

- Algorithms and Protocols:
 - Inter-domain, policy-based, and extreme scale ICN routing algorithms
 - Resource management, congestion control, and quality of service
 - Auto and zero configuration ICN
 - Algorithms and implementations targeting ultra-high performance
- Security and Privacy:
 - Privacy and information protection, both generally and in interaction with caching
 - ICN trust management and access control
 - IoT and cyberphysical system specific ICN security considerations and mechanisms

Network Measurement, Characterization, and Instrumentation

Research focused on tools and methodologies for measuring, characterizing, and instrumenting current and future ICN networks.

- Metrics for meaningful ICN network characterization
- ICN network measurement methodologies, tools and algorithms
- Architectural support for ICN network instrumentation
- Advances in ICN network simulation, modeling, and emulation
- Measurement and data-driven studies of existing information-centric networks and applications

Use Cases and Applications

Research that advances the use of ICN networking to support current and emerging applications:

- ICN algorithmic support, realization, and evaluation for concrete, domain-specific settings, such as:
 - Realtime and cyberphysical systems (e.g., ICN-mediated sensor/actuator control, industrial IoT, smart city, smart homes, vehicular communications)
 - Fog and edge computing
 - Data-intensive environments: distributed computation, cloud-based services, big data manipulation
- Application-level ICN toolkits and structuring principles:
 - ICN application-layer messaging and stream processing frameworks
 - Intuitive application support APIs, other higher-level abstractions, and their assessment

Deployment, Operations, and Real-World Considerations

Research that explores incentives, paths, and obstacles for ICN transition from research to widespread deployment, and research that addresses challenges unique to large-scale and commercially motivated ICN deployments.

- Translational Research:
 - Incentives and technical approaches for incremental deployment of ICN
 - ICN implementation over existing programmable networking: SDN, NFV, etc.
 - ICN business and economic models and their effects on deployability
- ICN Network Operations:
 - Management of ICN networks and systems
 - Algorithms and tools for ICN traffic engineering
- Experience and Evaluation:
 - Lessons learned from current implementations and deployments
 - Critical analysis of previous research in ICN, including reproducibility studies