Call for Contributions

Note: Onsite and Online Options
In order to accommodate a large number of situations, we are offering the option for either physical presence or virtual participation. We would be delighted if all authors manage to attend in person, but are aware that special circumstances are best handled by having flexible options.

Submission:
1. Inform the Chairs: with the Title of your Contribution
2. Submission URL:
https://www.iariasubmit.org/conferences/submit/newcontribution.php?event=ICSNC+2020+Special
Please select Track Preference as **AI-5GaaS**

Special track

AI-5GaaS: Artificial Intelligence based 5G as a Service

Chairs and Coordinators

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along with

ICSNC 2020, The Fifteenth International Conference on Systems and Networks Communications
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https://www.iaria.org/conferences2020/ICSNC20.html

Unprecedented expansion of cloud services offering Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS) paves the way for the virtualization of entire 5G-capable hardware and software stacks; thus, leading the emergence of 5G as a service (5GaaS). It enables on-demand service deployment, while mitigating the risks of physical installation, lowering operational and capital expenditures (OPEX/CAPEX), aggregating the service providers and customers' requirements on the same platform.

On the other hand, Content Delivery Networks (CDN) play a key role in the management of 5GaaS subscribers and their contents, where the applications define unique 5G requirements raised by novel trafic types, such as: enhanced Mobile Broadband (eMBB), Ultra-Reliable Low Latency (URLLC), and massive Machine Transmission Communication (mMTC). Various bandwidth and latency requirements of these service types force CDN to benefit from the technologies such as Edge/Fog computation in order to sustain ever-complicating network management, revolutionizing the heterogeneous orchestration of the entire infrastructure spanning from server deployment, to network access. Under this expanding heterogeneity, the most feasible way to meet 5G requirements is to design an intelligent network management on 5G physical infrastructure. According to service providers, dynamic configuration and intelligent self-management for CDN can be only handled by Software Defined Networks (SDN). They believe that SDN proposes inexpensive network feature insertion thanks to a global view on the network and programming the network devices dynamically without any intervention on the physical plane. It enables flexible, scalable, and self-manageable virtual network slices to the customers according to Service Level Agreements (SLA).

Both global management and network programmability features of SDN enable us to design and integrate novel techniques on 5G networks such as Artificial Intelligence (AI). In the recent years, AI is one of the most rapidly growing fields, finding new application domains with new and unique challenges everyday. This drastically changes the way the researchers/engineers used to approach to optimization processes. AI is broadly categorized into three main subsets such as Machine Learning (ML), Meta-Heuristics, and Fuzzy Inference Systems. Utilizing these tools, the following candidate applications for 5GaaS may only describe the tip of the iceberg. A technique executing ML uses the statistics collected from 5G physical plane periodically and performs supervised and/or unsupervised learning such as Artificial Neural Networks (ANN), Support Vector Machines (SVM), Decision Trees (DT), K-means clustering, Hidden Markov Model (HMM), etc. A technique executing Meta-Heuristics algorithms solves hard optimization problems that cannot be executed within a reasonable time such as Ant Colony Optimization (ACO), Particle Swarm Optimization (PSO), Genetic Algorithm (GA), Simulated Annealing (SA), etc. A technique depending on Fuzzy logic has an advantage in representing customer experience and their explanation abilities.

To this end, AI-5GaaS aims to improve the experience of customers and their service providers in 5G networks by serving AI-based techniques as a service to handle reduced OPEX/CAPEX. Therefore, this special issue aims to bring together talented researchers in the field and state-of-art designs and techniques to shape the future of 5G.

Potential topics include, but are not limited to:

- Meta-heuristics for AI based 5G networks;
- Fuzzy inference systems for AI based 5G networks;
- Cloud-Fog-Edge computing mechanisms;
- AI based mobility management;
- SDN/NFV for autonomous network management;
- CDN solutions for next generation networks;
- Application areas for 5GaaS;
- Security and Privacy issues for 5GaaS;
- Testbeds, applications, case studies for 5GaaS;
- APIS, new protocols and programming languages for 5GaaS

Important Datelines
Inform the Chairs (see Contacts below): as soon as you decide to contribute

Submission: August 24
Notification: September 13
Registration: September 23
Camera-ready: September 23

Contribution Types
- Regular papers [in the proceedings, digital library]
- Short papers (work in progress) [in the proceedings, digital library]
- Posters: two pages [in the proceedings, digital library]
- Posters: slide only [slide-deck posted on www.iaria.org]
- Presentations: slide only [slide-deck posted on www.iaria.org]
- Demos: two pages [posted on www.iaria.org]

Paper Format
- See: http://www.iaria.org/format.html

- Before submission, please check and comply with the editorial rules: http://www.iaria.org/editorialrules.html

Publications
- Extended versions of selected papers will be published in IARIA Journals: http://www.iariajournals.org
- Print proceedings will be available via Curran Associates, Inc.: http://www.proceedings.com/9769.html
- Articles will be archived in the free access ThinkMind Digital Library: http://www.thinkmind.org

Paper Submission
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Registration
- Each accepted paper needs at least one full registration, before the camera-ready manuscript can be included in the proceedings.
- Registration fees are available at http://www.iaria.org/registration.html

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