AKATECH

PhD

Ecole/Institution/Société:
CEA TECH, **France / Grenoble**

Discipline:
Artificial Neural Network

Type d'emploi::
Full-time

Date de publication:
2021-03-07

Personne à contacter:
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PhD position - Beyond Shannon with Semantic Communications for 6G Networks and Services

Job Description

SL-DRT-21-0844

Research Field

- The future of mobile communications will be characterized by ubiquitous connection availability, very dense networks in terms of number of users and access points, ultra-low latency, very high bandwidth, and energetic efficiency.

- The 6G network revolution will be enabled by cutting-edge technological innovations, concerning millimeter-wave radio communications, baseband and RF architecture, resources virtualization, and the native support of artificial intelligence.

- The main goal of this PhD investigation is to motivate the need, in the design of new 6G networks, for a paradigm shift from the mainstream research, which basically builds on Shannon's framework, towards semantic and goal-oriented communications.

- A game-changing idea consists in exploring semantics in wireless communications to go beyond the common Shannon paradigm of guaranteeing the correct reception of each single transmitted packet, irrespective of the meaning conveyed by the packet.

- The idea is that, whenever communication occurs to convey meaning or to accomplish a goal, what really matters is the impact that the correct reception / interpretation of a packet is going to have on the goal accomplishment.

- The PhD candidate will explore the very recently-proposed and innovative concept of wireless semantic communications. The work will focus on the design of algorithms for a proactive and dynamic implementation of semantic communications, targeting the optimal end-to-end efficiency of the joint allocation of the above mentioned resources.

Location

Département Systèmes (LETI)

Laboratoire Sans fils Haut Débit

Grenoble

Contact Person

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UNIVERSITY / GRADUATE SCHOOL

Grenoble INP

Mathématiques, Sciences et Technologies de l'Information, Informatique (MSTII)

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