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Intelligent Connectivity for Smart World

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The 1st International Workshop on Semantic Communications

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Important Dates

❖ Paper submission due:
  January 20, 2022
❖ Notification of acceptance:
  March 06, 2022
❖ Camera-ready papers:
  March 15, 2022

Submission link

https://edas.info/N28800

Webpage link

https://sites.google.com/view/semcom/home

Scope

In contrast to the Shannon paradigm whose underlying principle is to guarantee the correct reception of each single transmitted packet regardless of its meaning, the semantic communication is concerned with the problem of how transmitted symbols convey a desired meaning to the destination, as well as how effectively the received meaning affects the action in a desired way. By communicating the meaning or semantics of the data, semantic communication holds the promise of making wireless networks significantly more energy-efficient, robust, and sustainable.

Moreover, the advancements on artificial intelligence (AI) provide a powerful tool for solving the fundamental problems in semantic communications, such as lack of mathematical model for semantic information. As a result, significant efforts have been made recently to design the machine learning (ML)-based semantic communications for future wireless networks. To build a pathway to semantic communications, network architecture, information processing, and transmission technologies, including physical (PHY) layer processing, medium access control (MAC), and air-interface in general should be redesigned carefully.

Topics

The workshop will provide a forum for brainstorming on the semantic communications for 6G cellular networks and beyond. We aim to bring together the leading researchers in the field, both from academia and industry, to share their recent findings and their views. Topics of interest include, but are not limited to:

- Semantic entropy
- Semantic compression
- Semantic information pursuit for multimodal data
- Semantic coding and signal processing
- End-to-end semantic communication system
- Multi-agent reinforcement learning for semantic communications
- Distributed learning architectures for semantic communications: federated learning, split learning, in-device learning, collaborative inference, and so on
- Resource management for semantic communications
- Network architectures and protocols for semantic communications
- Privacy and security issues in semantic communications
- Efficient/scalable neural network architectures and training algorithms for semantic communications
- Experiments and test-beds for semantic communications
- Semantic communications in emerging wireless networks, i.e., virtual reality, autonomous driving, unmanned aerial vehicle, etc.

Paper Submission

The workshop accepts only novel, previously unpublished papers. The page length limit for all initial submissions for review is SIX (6) printed pages (10-point font) and must be written in English.All final submissions of accepted papers must be written in English with a maximum paper lengthof six (6) printed pages (10-point font) including figures. No more than one (1) additional printed page (10-point font) may be included in final submissions and the extra page (the 7th page) will incur an over length page charge of USD100. For more information, please see IEEE ICC 2022 official website: https://icc2022.ieee-icc.org/authors