# Sensing: Fundamental Limits and Modern Applications

*IEEE Journal on Selected Areas in Information Theory (JSAIT)*
Editor-in-Chief: Tara Javidi (University of California, San Diego)

**Call for Papers**
Modern networks rely on a variety of technologies to sense the environment for static or locomotive objects, in particular their shapes, distances, directions, or velocities. Sensing is a key feature in these networks and enables for example autonomous driving, motion sensing in health applications, target detection in smart cities, or optimal beam selections in millimeter wave communication. Besides these exciting new applications, sensing remains an important feature also for traditional applications such as temperature monitoring, or earthquake or fire detection, where new technologies are exploited including continuous feature monitoring over the entire range of an optical fiber network. The purpose of this special issue is to report on new exciting applications of sensing in modern networks, novel sensing architectures, innovative signal processing mechanisms related to sensing, as well as new results on the fundamental performance limits (resolution, sample complexity, robustness) of sensing systems. Particular focus will be on joint systems that integrate sensing with other tasks, for example communication, information retrieval (estimation, feature extraction, localization), super-resolution.

Prospective authors are invited to submit original manuscripts on topics including but not limited to:

- Joint sensing and communication
- Localization and mapping
- Sensing arrays / spatiotemporal sensing
- Distributed sensing
- Sensing with optical fibres
- Controlled sensing and active hypothesis testing
- Sensing for super-resolution
- Fundamental limits of computational sensing
- Sensing and Quantum processing

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Prospective authors must follow the *IEEE Journal on Selected Areas in Information Theory* guidelines regarding the manuscript and its format. For details and templates, please refer to the *IEEE Journal on Selected Areas in Information Theory* Author Information webpage. All papers should be submitted through Scholar One according to the following schedule:

**Key Dates**
**Manuscript Due:** October 10th, 2022
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