Special Session

"Brain-inspired Positioning and Navigation"

Abstract

Brain-inspired positioning and navigation is a new and promising way to achieve a more robust, energy-efficient, and generalized positioning and navigation solution for real-world applications. Inspired by the neural mechanism of the internal GPS in the brain, brain-inspired positioning and navigation methods aim to not only improve the accuracy, but also enhance the robustness, energy efficiency, and generalization ability of the system by continuously learning.

This special session aims to investigate the recent advances and development in brain-inspired positioning and navigation, including models of navigational cells (e.g., place cells, grid cells, heading cells), algorithms of biologically-inspired sensing, localization, mapping, and navigation, and applications to autonomous vehicles, robots or pedestrian.

In this Special Session, we invite authors to submit papers related (<u>but not limited</u>) to:

- Modeling of navigational cells (e.g., place cells, grid cells, heading cells)
- Algorithms of bio-inspired positioning, navigation, and mapping
- Applications of bio-inspired positioning, navigation, and mapping
- Neuromorphic computing for sensing, positioning and navigation
- Spiking neural networks for sensing, positioning, and navigation
- Neuromorphic sensors for sensing, positioning and navigation

Keywords

Brain-inspired positioning and navigation; Navigational neuron modelling; Spiking neural networks

Organizers

- Fuqiang Gu
- Fangwen Yu

Suggested Reviewers

- Chengming Jin
- Jan Grottke
- Xuke Hu
- Debaditya Acharya
- Zhiyong Zhou

Important Dates

- Submission deadline: 15 May 2023
- Notification of acceptance: 21 June 2023

Manuscripts are submitted according to the IPIN 2023 Conference instructions for authors. Papers undergo a single-blind review process by at least two reviewers. Accepted regular papers are submitted to IEEE Xplore Digital Library, accepted WiP papers to CEUR-WS.org, which is currently indexed by Scopus, Ei Compendex and DBLP.

Submit your paper now in *https://softconf.com/n/ipin2023/*
If you have any further questions, please contact Prof. Fuqiang Gu (gufq@cqu.edu.cn)