Postdoctoral Fellowships

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CALL FOR APPLICATIONS 2025 – FELLOWS

Supervisor	Siqi Wang
Supervisor page	https://siqi-wang-sorbonne.github.io/index.html
Host Institution	Sorbonne Université https://www.sorbonne-universite.fr/en
Research Lab	Group of electrical engineering of Paris (GeePs) https://www.geeps.centralesupelec.fr/index.php?page=home
Research Team	Electronics pole https://www.geeps.centralesupelec.fr/index.php?page=en-electronique

Project Title

Theoretical study of Over-the-Air Computation (AirComp) in Federated Learning for Spiking Neural Networks

Project Description

The work in this postdoctoral research aims to analyze the feasibility of using the Over-the-air computation (AirComp) technique in federated learning for SNNs.
The objective is to study and develop an innovative approach for training SNNs by exploiting federated learning within the AirComp framework. Since edge clients are connected via wireless channels for aggregation of their computed parameters, analog aggregation has been proposed in the AirComp framework.

Keywords

spiking neural network, federated learning, over-the-air computing

Description of the Host Research Lab

The laboratory is a joint unit of CNRS, CentraleSupélec, Paris-Saclay University and Sorbonne University. It is located on the CentraleSupélec campus of Paris-Saclay University in Gif-sur-Yvette and on the Pierre and Marie Curie campus of Sorbonne University in Paris. It is one of the most important laboratories in the Ile de France region in the field of "Electrical Engineering". The research work carried out within the unit combines a triple approach: theory - numerical modelling - characterisation and experimental validation. They are divided into 3 poles that allow activities to be carried out on a continuum that extends from materials to systems, whether electronic or energy conversion. Two cross-disciplinary centres of expertise provide support. The first capitalises on the work related to the laboratory's historical competence in the numerical modelling of electromagnetic systems with an orientation towards multiphysical, coupled problems. The second brings together the laboratory's numerous experimental platforms with the primary objective of pooling skills in instrumentation and sharing know-how and resources.

To submit your application, please send an email with the required documents to
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