# Call for Papers

## The First International Workshop on Energy-efficient and Secure Computing for Artificial Intelligence and Internet of Things (Energy-Secure AIoT 2022)

**in conjunction with the 15th IEEE International Conference on Internet of Things (iThings 2022)**

**August 22 - 25, 2022, Espoo, Finland**

**Summary**

In recent years, Artificial Intelligence (AI) has become a key component for building smart Internet-of-Things (IoT) and network infrastructures. With the development of AI computing algorithms and methods, nowadays, AI computing has evolved as a computational-hungry and data-hungry process. This has caused substantial electricity consumption with a large amount of financial and environmental costs (e.g., greenhouse gas emission). From a larger perspective, the global data centers had consumed 3% of global electricity consumption, ranking 11th in the list of country electricity consumption.

It is necessary to reduce carbon emission over the next decade to deter escalating rates of the natural disaster. There are two aspects that we would like to pay attention to in this special issue. First, we welcome research on work to reduce the energy consumption of AI computing such as DNN training and inference on intelligent cloud, IoT computing and networking systems. Second, we want to explore this issue from an adversarial perspective. Specifically, we want to investigate the possibility of manipulating the AI computing services to cause more financial loss or environmental damage, as well as the corresponding countermeasures. Also, other energy efficient and secure AI computing methodologies and techniques are within the scope of this workshop.

**Call for Papers**

Particular areas of interest include, but are not limited to:

- Novel Energy-efficient Techniques in Intelligent IoT Systems
- Ultra Energy-aware Computing Techniques in Resource-constrained IoT devices
- Energy-oriented Attacks and Defenses in Smart IoT Computing Systems
- Training and Inference Timing Attacks and Defenses in AI-enabled IoT Computing Systems
- Latency-oriented Attacks and Defenses in AI-enabled IoT Networking Systems
- Energy-efficient Resource Management for AI-enabled IoT Computing Systems
- Green Edge Computing and Edge Learning
- Hardware-level Energy-efficient Designs and Implementations
- Energy-efficient Coordination and Resource Allocation for Large-scale AI Computing Systems
- System-level Simulation, Prototyping, and Field-tests for AI-enabled Edge Devices
- Energy-efficient and Secure Federated Learning Techniques

- Cyber Security, Data Privacy, and Integrity in Green AI Computing systems
- Novel Security Issues in Intelligent Cloud-edge Ecosystems

Submission link: https://edas.info/newPaper.php?c=29460&track=111886

**Important Dates**:

Paper Submission Deadline: May 7th,2022

Authors Notification: June 10th, 2022

Final Manuscript Due: June 25th, 2022

Conference Date: August 22th-25th, 2022

**Submission**

Author Instructions

All papers need to be submitted electronically through the EDAS website (https://edas.info/newPaper.php?c=29460&track=111886) with PDF format. Submitted papers must not substantially overlap with papers that have been published or that are simultaneously submitted to a journal or a conference with proceedings. Papers must be clearly presented in English, must not exceed 6 pages in IEEE Computer Society proceedings format (or up to 8 pages with the pages over length charge), including tables, figures, references and appendices. The limit length of accepted papers should be 6 pages with at most 2 extra page charge.

Papers will be selected based on their relevance, novelty, originality, significance, soundness of methodology and clarity. Based on the research areas and expertise of the program committee members, all submitted manuscripts will be peer-reviewed rigorously, with at least three reviewers assessing each submitted manuscript.

Submission of a paper should be regarded as a commitment that, should the paper be accepted, at least one of the authors will register and attend the conference to present the work. IEEE iThings 2022 reserves the right to exclude a paper from distribution after the conference (e.g., removal from the digital library and indexing services), if the paper is not presented at the conference.

**Organization Committee**

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