Call for Papers

Themed Series of APSIPA Trans. on Signal and Information Processing on
"Pre-trained Large Language Models for Information Processing"

The concept of pre-training originates from transfer learning. With the development of self-supervised training objectives, a large language model can be trained on massive unlabeled data and applied to various downstream tasks by either fine-tuning or as pre-trained features. Starting in 2018, pre-trained language models (PLMs) and large language models (LLMs) such as BERT, GPT-series, and ChatGPT have vastly transformed the field of natural language processing (NLP). It has revolutionized various tasks, including machine translation, sentiment analysis, summarization, and conversational systems. Meantime, the success also broadcasts to other fields, including computer vision and speech processing. Several works have reshaped the mainstream in specific tasks, including BEIT for image representation learning and wav2vec 2.0 for speech signals.

The field of information processing encompasses a wide range of research areas, from traditional modalities to emerging fields. Among the most transformative recent developments in this domain are pre-trained language models, which have significantly impacted language processing, speech processing, and computer vision. As these models continue to evolve and advance rapidly, it is essential to reflect on the reasons for their success, how they are reshaping existing paradigms in information processing, and their potential to shape the future of various applications. This special issue provides a forum for researchers to share the latest cutting-edge developments related to pre-trained language models and pre-trained models in other modalities. However, while pre-trained large language models have shown remarkable success in various applications, many challenges remain. For example, researchers are exploring ways to improve these models' efficiency, interpretability, and explainability and addressing ethical considerations and biases in their training data. Additionally, there is a need to explore the potential of these models in areas beyond language processing, such as multimodal information processing and cross-domain transfer learning.

We aim to foster discussions that help advance the state-of-the-art in these exciting and rapidly evolving research areas. Therefore, this call for papers invites submissions on recent advances and novel approaches in large-scale pre-trained language models and their applications. Topics of interest include, but are not limited to:

- Techniques for pre-training large language models
  - Novel self-supervised training objectives
  - Efficient pre-training techniques
  - Multi-modal pre-training
- Fine-tuning and evaluation of pre-trained language models
  - Emerging new techniques: prompt learning, in-context learning, instruction tuning, etc
  - Fine-tuning strategies for downstream tasks
  - Transfer learning with pre-trained language models
  - Evaluating and benchmarking pre-trained language models
- Applications of pre-trained language models
  - NLP
  - Computer vision
  - Speech processing
  - Real-world systems and products

- Architecture and adaptation methods for pre-trained language models
  - Architecture and algorithms of training PLMs
  - Continual learning of PLMs
  - Cross-lingual or Multilingual
  - Generative PLMs
  - Efficient LLMs
- Pre-trained models for specific domains
  - Pre-trained models for visual understanding
  - Pre-trained models for speech signal processing
- Cloud-based pre-trained models
- Ethical considerations in pre-trained language models and their applications
- Overview, resource and position papers for pre-trained language models

Each paper submitted to this series will be reviewed on a first come, first served basis. The initial decision for each paper will be made within four weeks of submission. Once the submission window has closed, accepted papers ready for publication will be published online. The series will be accompanied by an editorial written by the guest editorial team. If a paper cannot be accepted within the publication window, it will be considered as a regular paper.

If you are interested in papers published in APSIPA-TSIP, please refer to the following: https://nowpublishers.com/Journal/AuthorInstructions/SIP

If you have further questions, please contact: bwang28c@gmail.com

Submission Window: **June 1 to September 30, 2023**

Guest Editorial Board:
Bin Wang, I2R, A*STAR, Singapore
Tatsuya Kawahara, Kyoto University, Japan
Haizhou Li, The Chinese University of Hong Kong, Shenzhen, China
Helen Meng, The Chinese University of Hong Kong, HongKong
Chung-Hsien Wu, National Cheng-Kung University, Taiwan