Call for Papers

Workshop on Information Theory for Large Language Models (IT4LLM)

Co-located with IEEE International Symposium on Information Theory (ISIT 2026)

July 3, 2026

Guangzhou, China

https://niuxueyan.github.io/it4llm/

Workshop Overview

The IT4LLM workshop explores the intersection of information theory and large language models (LLMs), uniting researchers to advance both theoretical understanding and practical applications. Contemporary AI systems, particularly LLMs, have demonstrated remarkable capabilities, yet they often function as "black boxes," undermining trust, fairness, and efficiency. This workshop will explore information theory as a principled framework to advance both the capabilities and interpretability of LLMs, addressing fundamental questions about how information-theoretic principles can guide the development, optimization, and interpretation of these models.

By integrating core information-theoretic concepts into the design and analysis of LLMs, we aim to deepen our understanding of their behavior, efficiency, and inherent limitations. The interdisciplinary gathering fosters collaboration between information theorists and machine learning researchers, seeking to uncover how information theory can provide fundamental insights into the capabilities and limitations of LLMs while simultaneously enhancing their transparency and performance.

Paper Submission

Authors are invited to submit papers describing original, unpublished research related to the application of information theory to large language models. Submissions should follow the ISIT 2026 guidelines and be no longer than 5 pages in the IEEE double-column format, plus an optional 6th page containing references only. The affiliation shown for authors should include an email address for persons who wish to write for more details about the paper.

Submit your papers through the ISIT 2026 submission system in EDAS: `https://edas.info/N34669`

Important Dates

- **Submission of workshop papers:** April 7, 2026
- **Notification of acceptance:** April 21, 2026
- **Final manuscripts:** April 28, 2026
- **Workshop date:** July 3, 2026

Scope and Topics

The IT4LLM workshop focuses on the intersection of information theory and large language models.

Topics of interest include but are not limited to:

- Information-theoretic foundations of LLMs
- Memory and retrieval in LLMs
- Reinforcement learning and LLM reasoning
- Generalization bounds for LLM training
- Uncertainty/hallucination detection in LLMs
- Multimodal LLM information fusion
- Energy-efficient LLMs via info-theoretic optimization

Invited Speakers

- **Prof. Yuejie Chi** - Yale University
- **Prof. Yingbin Liang** - The Ohio State University

Panel Discussion

Confirmed Panelists:

- **Prof. Deniz Gündüz** - Imperial College London
- **Prof. Jiantao Jiao** - UC Berkeley
- **Prof. Ioannis Kontoyiannis** - Cambridge University

The panel will discuss the role of information theory in advancing the next generation of large language models, addressing challenges in efficiency, trustworthiness, and interpretability.

Workshop Organizers

- **Dr. Xueyan Niu** - Huawei Technologies Co., Ltd.
- **Prof. Jun Chen** - McMaster University
- **Dr. Bo Bai** - Huawei Technologies Co., Ltd.

- Information will be updated on our website: