

CMCL 2024

**The 13th edition of the Workshop on Cognitive Modeling and
Computational Linguistics**

Proceedings of the Workshop

August 15, 2024

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Introduction

Welcome to the 13th edition of the Workshop on Cognitive Modeling and Computational Linguistics (CMCL 2024)!

CMCL has traditionally been the workshop of reference for research at the intersection between Computational Linguistics and Cognitive Science. After a blank in 2023, we are thrilled to be back, hosting this event once again after two years.

This year, CMCL has experienced multiple *firsts*, making it a landmark edition in its history. First, the organization team has transitioned to a younger generation and adopted modern logistics, such as using OpenReview and allowing commitments via ACL Rolling Review, for the first time. Second, this is the first CMCL held in the age of large language models (LLMs), prompting us to focus on fundamental scientific questions (e.g., their alignment with human cognition/perception) regarding artificial intelligence and cognitive science. Third, this is also the first CMCL held in Asia, marking a new geographical milestone for the workshop. Lastly, we received a record number of 55 submissions (37 regular submissions and 18 cross-submissions, including Findings papers), nearly doubling the submission number in the previous edition, providing a testament to the growing interest in this scientific, interdisciplinary field and the need for the dedicated workshop even in the age of somewhat engineeringly-oriented LLMs.

Out of 37 regular submissions, 34 papers are via direct submission (including 1 paper withdrawn before reviewing), and 3 papers are through the ARR commitment. We accepted 23 papers, resulting in an acceptance rate of $23/36=63.9\%$, slightly higher than in previous years. Additionally, 12 non-archival, cross-submissions were accepted and will be presented during the poster sessions. We are excited to have a diverse set of topics, including but not limited to, sentence processing, language acquisition, and new investigations powered by modern (multimodal) LLMs, covered in this year's program.

We extend our deepest gratitude to the Program Committee members; their dedication and expertise are the backbone of CMCL's success. We also express our sincere thanks to our invited speakers, Dr. Frank Keller, Dr. Aida Nematzadeh, and Dr. Sandro Pezzelle, for their valuable contributions to this year's program.

Lastly, we are immensely grateful to our sponsor, the Japan Science and Technology Agency. Their generous support allows us to subsidize the participation of our invited speakers.

The CMCL 2024 Organizing Committee

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Giulia Rambelli, University of Bologna
Ece Takmaz, University of Amsterdam
Philipp Wicke, Ludwig Maximilian University
Yohei Oseki, University of Tokyo

Invited speakers:

Frank Keller, University of Edinburgh
Aida Nematzadeh, Google DeepMind
Sandro Pezzelle, University of Amsterdam

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Xinchen Yang, University of Maryland
Ryo Yoshida, The University of Tokyo

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Language models' probability distributions are calibrated to cognitive profiles: An investigation of the predictive power of surprisal and entropy

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What Makes Language Models Good-enough?

Daiki Asami and Saku Sugawara

Structural Similarities Between Language Models and Neural Response Measurements

Antonia Karamolegkou, Jiaang Li, Yova Kementchedjhieva, Mostafa Abdou, Sune Lehmann and Anders Søgaard

Tree-Planted Transformers: Unidirectional Transformer Language Models with Implicit Syntactic Supervision

Ryo Yoshida, Taiga Someya and Yohei Oseki

Exploring Spatial Schema Intuitions in Large Language and Vision Models

Philipp Wicke and Lennart Wachowiak

How Much Does Non-verbal Communication Conform to Entropy Rate Constancy?: A Case Study on Listener Gaze in Interaction

Yu Wang, Yang Xu, Gabriel Skantze and Hendrik Buschmeier

VerbCLIP: Improving Verb Understanding in Vision-Language Models with Compositional Structures

Hadi Wazni, Kin Ian Lo and Mehrnoosh Sadrzadeh

Can You Learn Semantics Through Next-Word Prediction? The Case of Entailment

William Merrill, Zhaofeng Wu, Norihito Naka, Yoon Kim and Tal Linzen

So many design choices: Improving and interpreting neural agent communication in signaling games
Timothée Bernard and Timothee Mickus

The Emergence of High-Level Semantics in a Signaling Game
Timothée Bernard, Timothee Mickus and Hiroya Takamura

PUB: A Pragmatics Understanding Benchmark for Assessing LLMs' Pragmatics Capabilities
Settaluri Lakshmi Sravanthi, Meet Doshi, Pavan Kalyan Tankala, Rudra Murthy, Raj Dabre and
Pushpak Bhattacharyya

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09:00 - 09:40 *Keynote talk by Dr. Sandro Pezzelle*

09:40 - 10:40 *Session 1: Oral Presentations*

Hierarchical syntactic structure in human-like language models

Michael Wolfman, Donald Dunagan, Jonathan Brennan and John T. Hale

Do large language models resemble humans in language use?

Zhenguang Cai, Xufeng Duan, David Haslett, Shuqi Wang and Martin Pickering

Evaluating Vision-Language Models on Bistable Images

Artemis Panagopoulou, Coby Melkin and Chris Callison-Burch

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BAMBINO-LM: (Bilingual-)Human-Inspired Continual Pre-training of BabyLM

Zhewen Shen, Aditya Joshi and Ruey-Cheng Chen

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Timotheé Bernard and Timothee Mickus

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15:40 - 16:00 *Break*

16:00 - 17:20 *Session 4: Poster Presentations*

Locally Biased Transformers Better Align with Human Reading Times

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17:20 - 18:00 *Invited talk by Dr. Aida Nematzadeh*

18:00 - 18:10 *Closing Remarks*