

Analogy-Angle 2025

**The 2nd Workshop on Analogical Abstraction in Cognition,
Perception, and Language (Analogy-Angle II)**

Proceedings of the Workshop

August 1, 2025

©2025 Association for Computational Linguistics

Order copies of this and other ACL proceedings from:

Association for Computational Linguistics (ACL)
317 Sidney Baker St. S
Suite 400 - 134
Kerrville, TX 78028
USA
Tel: +1-855-225-1962
acl@aclweb.org

ISBN 979-8-89176-274-9

Preface by the Workshop Chairs

Welcome to the 2nd edition of the Workshop on Analogical Abstraction in Cognition, Perception, and Language (Analogy-Angle II)!

Analogical abstraction is a fundamental human cognitive skill (Penn et al. 2008) (Penn et al. 2008; Hofstadter 2001) defined as the ability to perceive and utilize the similarities between concepts, situations, or events based on (systems of) relations rather than surface similarities (Holyoak 2012; Gentner and Smith 2012). Analogy enables creative inferences, explanations, and generalization of knowledge and has been used for scientific inventions (Dunbar 2012), solving problems (Gick and Holyoak 1980), and policy-making Houghton 1998. As such, it has been the subject of cognitive theories and studies about humans for standard processes, such as retrieving memories (Wharton et al. 1994) and problem-solving (Gick and Holyoak 1980).

Analogical tasks have gained considerable popularity in natural language processing (NLP) and artificial intelligence (AI), where they are often framed as tests of a model’s intelligence in comparison to human performance. These tasks typically involve so-called word-based proportional analogies of the form (A : B :: C : D). (Mikolov et al. 2013a; <https://arxiv.org/pdf/1301.3781>; Gladkova et al. 2016; Ushio et al. 2021) lend themselves well to large language models (LLMs) (Webb et al. 2023). However, controlling for association and memorization (Stevenson et al. 2023; Lewis and Mitchell 2024) or shifting toward more complex settings like narratives reveals limitations in scope, generalizability, and alignment with cognitive theories (Nagarajah et al. 2022; Wijesiriwardene et al. 2023; Sourati et al. 2024).

Inspired by the richness of analogical abstraction and the wide interest in this topic from computational linguistics, artificial intelligence, and cognitive psychology, ANALOGY-ANGLE II connects these communities and facilitates cross-disciplinary activities. ANALOGY-ANGLE II welcomes novel contributions in short, long, and review formats, as well as relevant papers accepted at top-tier venues over the past year (so-called *dissemination papers*).

Topics of interest belong to four major categories:

- 1. Cognitive modeling**, with the following sub-topics: analogy and abstraction; relation to conceptual metaphor, figurative language, sarcasm, and irony; cognitive frameworks of analogy; and cognitive psychological studies on analogy involving human participants.
- 2. Algorithms and methods**, featuring the sub-topics: studies of the analogical abilities of LLMs and multimodal models; algorithmic approaches to analogy; augmentation and verification of LLMs and multimodal models through analogy; neuro-symbolic AI architectures for analogical abstraction; and extracting analogies from knowledge bases.
- 3. Tasks and benchmarks**, with sub-topics: matching narratives and situational descriptions through narratives; novel tasks and benchmarks for evaluating analogies in text and vision; analogy in longer formats, e.g., narratives and videos; analogy and visual abstraction tasks; and analogical discovery in computational creativity.
- 4. Applications**, such as: personalization, explanation, and collaboration; novel applications of analogical abstraction; studies of the impact of analogy in specific applications and domains, including education, innovation, and law.

ANALOGY-ANGLE II aims to form a comprehensive picture of the current landscape of analogical abstraction, and point to standing challenges, evaluation methodologies, and emerging techniques of interest. To this end, the workshop features two prominent speakers with complementary perspectives, and paper sessions that cover a wide range of the envisioned topics. The multidisciplinary nature of

ANALOGY-ANGLE II is supported by the broad skills of the organization team and the program committee, as well as the diversity principle guiding the list of topics and the invited keynotes. After a successful first workshop at IJCAI 2024, we see ACL as an ideal venue for our second iteration. ACL is a primary venue for cutting-edge research on analogy and abstraction, facilitating discussions with leaders at the intersection of natural language processing, cognitive linguistics, and perception.

We received 14 novel submissions. 10 of them were submitted via direct submission, and the remaining 4 through the ARR commitment. Based on three reviews per submission, we accepted 9 novel papers, resulting in an acceptance rate of 64%. Additionally, 3 non-archival, cross-submissions were accepted based on two reviews per paper, assessing their relevance.

We are deeply grateful to the members of the Program Committee for their dedicated efforts. Our sincere thanks also go to our invited speakers, Melanie Mitchell and Ekaterina Shutova, for their valuable and inspiring contributions to this year's program. We thank Melanie Mitchell for her talk on abstraction in humans and AI systems and Ekaterina Shutova for her talk on metaphors.

Finally, we gratefully acknowledge the support of our funding bodies, in particular the NWO AiNed project "Human-Centric AI Agents with Common Sense", which funded Filip Ilievski, and the European Research Council's ABSTRACTION project (Grant agreement: ERC-2021-STG-101039777), which funded Marianna Bolognesi and Giulia Rambelli.

The Analogy-angle II 2025 Organizing Committee

Program Committee

Workshop Chairs

Marianna Bolognesi, University of Bologna
Filip Ilievski, Vrije Universiteit Amsterdam
Giulia Rambelli, University of Bologna
Ute Schmid, University of Bamberg
Pia Sommerauer, Vrije Universiteit Amsterdam

Reviewers

David M. Cerna, Czech Academy of Sciences Institute of Computer Science
Cas W. Coopmans, New York University
Sydelle De Souza, University of Edinburgh
Valentin Forch, Technische Universität Chemnitz
Diego Frassinelli, Ludwig-Maximilians-Universität München
Frank Guerin, University of Surrey
Mohammad Hossein Khojasteh, Vrije Universiteit Amsterdam
Gustaw Opielka, University of Amsterdam
Zeynep G. Saribatur, Technische Universität Wien
Hwanjun Song, Korea Advanced Institute of Science and Technology
Zhivar Sourati, University of Southern California
Eunice Yiu, UC Berkeley
Leonidas A. A. Doulas, University of Edinburgh, University of Edinburgh
Yifan Jiang, Information Sciences Institute, University of Southern California
Sundong Kim, Gwangju Institute of Science and Technology
Martha Lewis, University of Amsterdam
Antonio Lieto, University of Salerno
Henri Prade, CNRS, France and University of New South Wales
Philipp Wicke, Ludwig-Maximilians-Universität München
Alessandra Zarcone, Technische Hochschule Augsburg

Table of Contents

<i>Tore-Klose: Record Scorer, Goal Hunter, Machine? Human Association Norms for German Personal Name Compounds</i>	
Annerose Eichel, Tana Deeg, Andre Blessing, Milena Belosevic, Sabine Arndt-Lappe and Sabine Schulte Im Walde.....	1
<i>Using Large Language Models to Perform MIPVU-Inspired Automatic Metaphor Detection</i>	
Sebastian Reimann and Tatjana Scheffler.....	10
<i>Modeling Background Knowledge with Frame Semantics for Fine-grained Sentiment Classification</i>	
Muhammad Okky Ibrohim, Valerio Basile, Danilo Croce, Cristina Bosco and Roberto Basili .	22
<i>On choosing the vehicles of metaphors without a body: evidence from Large Language Models</i>	
Veronica Mangiaterra, Chiara Barattieri Di San Pietro, Federico Frau, Valentina Bambini and Hamad Al-Azary.....	37
<i>Prompting Metaphoricity: Soft Labeling with Large Language Models in Popular Communication of Science Tweets in Spanish</i>	
Alec Sánchez-Montero, Gemma Bel-Enguix, Sergio-Luis Ojeda-Trueba and Gerardo Sierra ..	45
<i>HATS : Hindi Analogy Test Set for Evaluating Reasoning in Large Language Models</i>	
Ashray Gupta, Rohan Joseph and Sunny Rai.....	57
<i>Simulating Emotional Intelligence in LLMs through Behavioral Conditioning and Analogical Retrieval</i>	
G.Sai Linisha Reddy, Mounil Hiren Kankhara, Mridul Maheshwari, Swayam Bansal, Rishit Kapoor, Himesh Reddy M and Bagesh Kumar.....	81
<i>Can Stories Help LLMs Reason? Curating Information Space Through Narrative</i>	
Vahid Sadiri Javadi, Johanne Trippas, Yash Kumar Lal and Lucie Flek.....	92
<i>Testing Spatial Intuitions of Humans and Large Language and Multimodal Models in Analogies</i>	
Ivo Bueno, Anna Bavaresco, João Miguel Cunha and Philipp Wicke.....	108