UMRs in Boston Summer School – 2nd Call for Applications

June 9-13, 2025
Brandeis University, Massachusetts, USA
URL: https://umr4nlp.github.io/web/SummerSchool2025.html

We invite applications for a five-day summer school on Uniform Meaning Representations (UMR).

Impressive progress has been made in many aspects of natural language processing (NLP) in recent years. Most notably, the achievements of transformer-based large language models such as ChatGPT would seem to obviate the need for any type of semantic representation beyond what can be encoded as contextualized word embeddings of surface text. Advances have been particularly notable in areas where large training data sets exist, and it is advantageous to build an end-to-end training architecture without resorting to intermediate representations. For any truly interactive NLP applications, however, a more complete understanding of the information conveyed by each sentence is needed to advance the state of the art. Here, "understanding" entails the use of some form of meaning representation. NLP techniques that can accurately capture the required elements of the meaning of each utterance in a formal representation are critical to making progress in these areas and have long been a central goal of the field. As with end-to-end NLP applications, the dominant approach for deriving meaning representations from raw textual data is through the use of machine learning and appropriate training data. This allows the development of systems that can assign appropriate meaning representations to previously unseen text.

In this five-day course, instructors from the University of Colorado and Brandeis University will describe the framework of Uniform Meaning Representations (UMRs), a recent cross-lingual, multi-sentence incarnation of Abstract Meaning Representations (AMRs), that addresses these issues and comprises such a transformative representation. Incorporating Named Entity tagging, discourse relations, intra-sentential coreference, negation and modality, and the popular PropBank-style predicate argument structures with semantic role labels into a single directed acyclic graph structure, UMR builds on AMR and keeps the essential characteristics of AMR while making it cross-lingual and extending it to be a document-level representation. It also adds aspect, multi-sentence coreference and temporal relations, and scope. Each day will include lectures and hands-on practice.

Topics to be covered may include the following, among others:

1. The basic structural representation of UMR and its application to multiple languages;
2. How UMR encodes different types of MWE (multi-word expressions), discourse and temporal relations, and TAM (tense-aspect-modality) information in multiple languages, and differences between AMR and UMR;
3. Going from IGT (interlinear glossed text) to UMR graphs semi-automatically;
4. Formal semantic interpretation of UMR incorporating a continuation-based semantics for scope phenomena involving modality, negation, and quantification;
5. Extension to UMR for encoding gesture in multimodal dialogue, Gesture AMR (GAMR), which aligns with speech-based UMR to account for situated grounding in dialogue.
6. UMR parsing and applications

To apply, please complete this form by Nov. 15, 2024.

https://www.colorado.edu/linguistics/umrs-boston-summer-school-application

Other important dates:

- Notification of acceptance: **Dec. 15, 2024**
- Confirmation of participation: **Jan. 31, 2025**