

Internship position on Improving the Automatic Detection of Word Meaning Negotiation Indicators in Conversation through Active Learning

Context

In conversation, speakers sometimes signal that a word or expression is unclear or disputed, leading to short exchanges where meaning is clarified or negotiated. This internship focuses on improving the automatic detection of such interactions in conversational data. Building on existing models, the project will explore active learning to efficiently improve detection performance with limited annotation. The work aims to support the large-scale analysis of meaning-related misunderstandings and may result in improved models, new annotated data, and insights on current models' capabilities.

Place of work: INRIA Paris, ALMAnaCH project-team

Starting date: From April 2026 (flexible)

Duration: 6 months

Candidate profile

The successful candidate should have, or be in the process of obtaining, a Master's Degree in one or more of the following areas: Natural Language Processing, Computational Linguistics, Deep Learning/Machine Learning. Required skills:

- Excellent Python programming skills
- Excellent command of English
- Good familiarity with machine learning and neural language models for NLP
- Having an interest in linguistics, discourse or communication

Desirable (but not mandatory):

- Having an interest in pursuing an academic thesis after the internship

How to apply

The application should be formatted as ***a single pdf file*** and should include:

- A complete and detailed curriculum vitae
- A cover letter
- Contact details of one or two referees

The pdf file should be sent to the two supervisors, Chloé Clavel and Aina Garí Soler:

chloe.clavel@inria.fr, aina.gari-soler@inria.fr

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Keywords: natural language processing, word meaning (negotiation), computational lexical semantics, semantic alignment, semantic coordination, interactional linguistics, misunderstanding, clarification requests

Supervision: Chloé Clavel, Aina Garí Soler

Description:

In natural, everyday conversation, speakers are sometimes faced with unclear, ambiguous, or contested words or expressions. These situations can give rise to Word Meaning Negotiations (WMNs, Myrendal, 2015): exchanges in which participants explicitly ask for clarification or question or negotiate the meaning of a word or phrase. WMNs are valuable for studying how people detect, signal, and deal with misunderstandings, and offer a lens on collaborative meaning construction and repair mechanisms in dialog (Bazzanella and Damiano, 1999). They can also support the detection of unclear word usages and contribute to the development of dialogue systems that can detect, avoid and resolve such situations as humans do.

A typical WMN sequence consists of three parts: a *trigger* (a problematic word usage), an *indicator* (an utterance signaling the need to clarify or challenge word meaning), and a *negotiation* (one or more turns where speakers resolve the issue). Among these, indicators are the easiest to identify automatically, making them a key target for the detection of this kind of interaction.

Previous work on detecting indicators has relied either on regular expressions, followed by manual annotation (Garí Soler et al., 2025a) or on automatic detection through language models (Garí Soler et al., 2025b). While automatic detection shows promise, performance is still limited, and further improvements are constrained by data scarcity. This makes the problem particularly well suited to an active learning approach, allowing models to improve iteratively and focusing annotation effort on the most informative examples.

The goal of this internship is to improve the automatic detection of WMN indicators by designing and evaluating an active learning framework, potentially combined with simple regular-expression based methods, whereby models will iteratively improve by selectively annotating the most uncertain or informative instances. This work is a crucial step toward reducing annotation costs for the collection of WMN data from diverse conversational corpora. During the internship, the candidate will:

- Become familiar with WMN, conversational repair, existing active learning methodologies and the previous models and datasets used for this task;
- Propose and implement active learning strategies for WMN indicator detection (human annotation can be provided),
- Select and work with different types of conversational data;
- Experiment with the use of conversational context;
- Perform error analysis and evaluate and compare to previous approaches.

Ideally, the internship will result in (1) improved methods and/or models for WMN indicator detection, (2) additional annotated data for this task, and (3) a clearer understanding or model limitations.

Depending on its outcome, the work done during this internship can lead to a research paper to be submitted to a relevant NLP conference or workshop.

References:

Carla Bazzanella and Rossana Damiano. 1999. [The interactional handling of misunderstanding in everyday conversations](#). *Journal of Pragmatics*, 31(6):817–836.

Aina Garí Soler, Jenny Myrendal, Chloé Clavel, and Staffan Larsson. 2025b. [The NeWMe Corpus: A gold standard corpus for the study of Word Meaning Negotiation](#). PREPRINT (Version 1) available at Research Square.

Aina Garí Soler, Matthieu Labeau, and Chloé Clavel. 2025. [Toward the Automatic Detection of Word Meaning Negotiation Indicators in Conversation](#). In *Findings of the Association for Computational Linguistics: EMNLP 2025, Suzhou, China, November 5-7*.

Jenny Myrendal. 2015. [Word meaning negotiation in online discussion forum communication](#). Ph.D. thesis, University of Gothenburg.

Relevant links

ALMAAnaCH: <https://almanach.inria.fr/>

Chloé Clavel: <https://clavel.wp.imt.fr/>

Aina Garí Soler: <https://ainagari.github.io/>