



Two openings for PhD candidates at Heidelberg University's NLP Group

The [Natural Language Processing Group](#) of the [Computational Linguistics Department](#) at [Heidelberg University](#)

has openings for **two PhD candidates**:

1. **A doctoral scholarship in Natural Language Understanding and Generation**
2. **A PhD position in a new project in the DFG priority program RATIO (Robust Argumentation Machines)**

## **Position 1: Doctoral scholarship in Natural Language Understanding and Generation**

The scholarship is dedicated to outstanding young researchers in the areas of Computational Linguistics and Machine Learning.

We are looking for an outstanding doctoral candidate with a strong background in Natural Language Processing and Machine Learning and a strong interest in Natural Language Understanding and Generation. Additional background in multimodal processing is a definite plus.

The ideal candidate has strong programming skills, can work both independently and in a team, and has good communication skills in English, both oral and written.

The thesis topic will be defined jointly with the selected candidate as part of the application process and should be centered around the following broad research themes:

- Natural language understanding and generation
- Knowledge-grounded text coherence in discourse or dialogue
- Interaction of linguistic and visual processing in NLU and NLG

The scholarship is granted by Heidelberg University, based on funding from [HITS gGmbH](#). It is available for a duration of 3 years, and will be granted to full length conditional on a positive evaluation after two years. Under special conditions the scholarship can be extended up to a maximal period of 4 years.

Basic funding per month is €1.468. In addition, a travel budget is provided for each year.

Note: The Heidelberg University scholarship does not constitute an employment relationship between Heidelberg University and the scholarship holder. The payments are therefore not considered a remuneration for work according to § 14 of the German Social Security Code (SGB IV) and are not subject to social security contributions in the sense of §§ 18, 19 EStG.

The scholarship can only be awarded if the candidate does not pursue any other self-employed or non-self-employed activity in the context of which he or she earns income. Additional income is possible, however, within the limits of the basic tax allowance according to § 32a I sentence 2 EStG.

There is no legal entitlement to a scholarship even if the criteria are met.

For **application date** and **procedure** see below.

Heidelberg University strives to increase the proportion of women in areas where women are underrepresented and therefore strongly encourages qualified women to apply.

Severely disabled persons will be given priority in the case of equal suitability.

## **Position 2: A PhD position in a new project in the DFG priority program RATIO (Robust Argumentation Machines)**

The Project **ACCEPT: Perspectivized Argument Knowledge Graphs for Deliberation Support** seeks to fill a PhD position according to TV-L 13 (75%) at the earliest convenience.

The project is jointly conducted by [Prof. Anette Frank](#), head of the [Heidelberg Natural Language Processing Group](#) at the Computational Linguistics Department, Heidelberg University and [Prof. Philipp Cimiano](#), head of the [Semantic Computing Group](#) at Bielefeld University. The advertised position is dedicated to the Heidelberg part of the project.

### **ACCEPT: Perspectivized Argument Knowledge Graphs for Deliberation Support**

Many decisions in daily life and in political or societal contexts are difficult to resolve and require deliberation of arguments in favor or against actions to be taken. In this context, conflicting interests need to be balanced to achieve general acceptance, fairness and optimal outcomes. Known tools that support humans in deliberation processes include debating portals with pre-structured pro and con arguments or argument search engines. These instruments are crucially based on previously discussed issues. However, real argumentation needs to go beyond coarse-grained structuring of previously discussed pro and con arguments.

The ACCEPT project aims at creating systems that perform deep understanding of debated issues and analysis of

- potential implications of envisaged decisions,
- how these may affect interested parties, and
- how to weight their potential consequences,

in order to find optimal and widely accepted solutions on debated issues.

The ACCEPT project aims to push the limits beyond prior work in computational argumentation, by designing systems that are able to

- address issues not discussed before.

We aim to do this

- by creating argumentation systems that leverage knowledge resources to perform knowledge-based reasoning, using both sub-symbolic modeling by means of neural models and symbolic modeling by means of knowledge graphs, and
- by representing, contextualizing and enriching arguments in a multi-factorial argument knowledge graph that includes stakeholder perspectives and their interests, values and goals.

Based on the argument knowledge graph we will develop methods that analyze debated issues from multiple perspectives and learn to reason towards solutions, in order to support users with interpretable deliberation support.

## **Advertised position**

The Heidelberg part of the project invites for applications for a PhD position (TV-L 13, at 75% of a full-time equivalent), next to a 25% position, which will be held by an experienced project member from the first funding phase.

## **Prerequisites**

We are looking for a highly qualified candidate with a degree in Computational Linguistics, Computer Science or related studies with a specialization in Natural Language Processing or Machine Learning. Experience in knowledge-based NLP and reasoning using neural methods is a definite plus.

The position requires strong programming skills and expertise in neural NLP methods and symbolic knowledge representations. We expect the ability and willingness to work independently and in a team, as well as good communication skills. The position requires, beyond good general English communication and writing skills, very good understanding of English up to finer nuances.

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Severely disabled persons will be given priority in the case of equal suitability.

## **About the Heidelberg NLP Group**

**The group led by Prof. Anette Frank** conducts research on **Natural Language Understanding** with a focus on **semantics and discourse processing**. We regularly publish in top-tier international venues and our research is highly successful in integrating advanced machine learning methods with insightful linguistic analysis. We provide a cooperative working environment and value a mutually supportive working style. We provide good computational facilities and services with access to large GPU clusters.

Our **present and recent past collaboration projects** include the [DFG Priority Program RATIO](#), through our prior [project ExpLAIN](#), the [COST Action Multi3Generation](#), the [AIPHES DFG Graduate School](#) jointly organized with TU Darmstadt and HITS, and the [Leibniz ScienceCampus 'Empirical Linguistics and Computational Language Modeling \(LiMo\)'](#) with the Institute for the German Language in Mannheim.

With three professorships, the [Computational Linguistics Department at Heidelberg University](#) is one of major sites in Natural Language Processing in Germany. We offer a full BA and MA program in Computational Linguistics and run a Doctoral Program with the [Heidelberg Institute of Theoretical Studies \(HITS\)](#).

## Application process

Application documents **for both positions** must include

- a motivation letter
- CV including publications or theses, as well as contact information for 2 to 3 references
- detailed certificates of study and work experience
- a thesis or other publication in electronic form

Please submit your documents electronically by **January 29, 2021** to:

applications\_NLP@cl.uni-heidelberg.de

with subject line “Uni Heidelberg Scholarship” or “DFG project ACCEPT”.

The positions are open until filled. Preferred starting dates are April or May 2021. Inquiries regarding the positions can be directed to [sekretariat@cl.uni-heidelberg.de](mailto:sekretariat@cl.uni-heidelberg.de).