School of Applied Linguistics

Università della Svizzera italiana

Spring School 2024
Questioning Large Language Models, understanding (multimodal) argumentation in the age of AI and social media.
In the context of LAND: Doctoral Programme in Applied Linguistics: Managing Languages

Details
- <u>Date</u>: 6-8 May 2024
- <u>Place</u>: Hotel Restaurant Seehof, Seeplatz 6, CH-6403 Küssnacht a.R.
- <u>Lecturers</u>:
  - Smaranda Muresan (Columbia University/Barnard College)
  - Janina Wildfeuer (University of Groningen)
- 1.5 ECTS (participants must attend the entire spring school)

Application
To apply for the spring school, please provide a brief motivational letter stating why you would like to attend the school, as well as a short description of your current research (max. 1 page). Application Deadline: 4 April 2024 (you will be notified about the decision in the following week)

Preliminary Schedule

MON, 6 MAY	TUES, 7 MAY	WED, 8 MAY
Arrival at Hotel Seehof	09-13 *Large Language Models: The Curious Case of Argumentation and Creativity* Smaranda Muresan	09-13 *Modelling Multimodal Argumentation in times of Social Media and AI* Janina Wildfeuer
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13-18 *Large Language Models: The Curious Case of Argumentation and Creativity* Smaranda Muresan	14-17.30 *Modelling Multimodal Argumentation in times of Social Media and AI* Janina Wildfeuer	14-15.30 *Modelling Multimodal Argumentation in times of Social Media and AI* Janina Wildfeuer
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Profiles
Janina Wildfeuer is a #multimodalist at the University of Groningen with a multi-faceted background in linguistics, semiotics, and discourse analysis. She has about 15 years of experience in working with (audio-)visual communication such as films, comics, social media, or games. She currently focusses on the question of how (audio-)visual communication can help build a better future for our society.

Smaranda Muresan is a Research Scientist at Columbia University, a Visiting Associate Professor at Barnard College and an Amazon Scholar. Her research focuses on human-centric NLP for social good and responsible computing. She develops theory-guided and knowledge-aware computational models for understanding and generating language in context. She has worked on research topics such as argument mining and generation, fact-checking and misinformation detection, figurative language understanding and generation and more recently on explainable models and human-AI collaboration frameworks for high-quality datasets creation and helping humans solve tasks.

Seminar Descriptions

Large Language Models: The Curious Case of Argumentation and Creativity
Smaranda Muresan: Columbia University/Barnard College

Topic, focus: Large language models (LLMs) constitute a paradigm shift in Natural Language Processing (NLP) and its applications across all domains. Models such as ChatGPT seem to possess human-like abilities --- reasoning about problems, passing bar exams, writing stories. But do they? Moreover, while the potential of these technologies for social good is large, the risks are also comparable. In this seminar, the students will learn the fundamentals about the modeling, theory and ethical aspects of LLMs, their great capabilities and striking limitations, while engaging in discussion of cutting-edge research on human-centered NLP/AI models designed for social good and responsible computing. We will discuss several desiderata for building human-centeric NLP systems: knowledge-aware models, human-AI collaboration frameworks and evaluation protocols. NLP systems that interact with humans need to be knowledge aware (e.g., linguistic, commonsense, sociocultural norms) and should be able to collaborate with humans to create high-quality datasets for training and/or evaluating NLP models, to help humans solve tasks, and ultimately to align better with human values. Throughout the seminar we will use primarily two case studies as examplars: argumentation and creativity. Some topics include: generation of implicit premises from an incomplete argument, recognizing fallacies, generating counter-arguments, generating metaphors including visual metaphors, human-AI collaboration frameworks for creativity support, evaluation protocols for assessing the creative capabilities of LLMs in both producing as well as assesssing creative text.

Main value added from a theoretical and methodological perspective:
Student participating in the seminar will advance their knowledge of the foundational aspects of Large Language models such as various architectures, learning paradigms, and ethical considerations. The seminar will then focus on discussing design criteria for human-centric NLP systems: knowledge-aware models, human-AI collaboration frameworks and theoretically-guided evaluation protocols. The course will emphasize two case studies: argumentation and creativity.

Main value added from a practical perspective:
Students participating in the seminar will gain a critical understanding of the capabilities and limitation of LLMs, their type (e.g., open source vs. close source, small models vs. large models) and which models to use depending on the problem to be solved. They will also learn how to design human-centric NLP systems and how to apply the ideas to concrete tasks in argumentation and creativity.

Learning objectives:

- Knowledge: Participants learn the foundation of LLMs and human-centric NLP system design.
- Skills, practices: Participants will familiarize themselves with various LLMs, understand which models to use for various problems, and discuss cutting-edge research around human-centric NLP systems
- Researcher attitudes: Participants critically assess capabilities and limiations of current models and brainstorm about solutions for next generation human-centric NLP systems.

Modelling Multimodal Argumentation in times of Social Media and AI
Dr Janina Wildfeuer, University of Groningen

Topic, focus:

The seminar will provide an introduction to and overview of the state of the art of multimodal argumentation with insights from both argumentation theory, rhetorics, as well as multimodality research and semiotics. The main focus will lie on modelling multimodal arguments and standpoints in social media artefacts and AI-generated video content. Starting from a practice-based and example-oriented perspective, we will on the one hand discuss current theories and methodological developments in the field. On the other hand, hands-on instructions of how to analyze and reconstruct arguments and standpoints in (audio-)visual artefacts will help us examine marketing spots, health communication videos, and (fake) news items. The main aim of the seminar is to equip participants with knowledge and skills for dealing with complex cases of multimodal argumentation and to teach them to conduct result-oriented analyses.

Main value added from a theoretical and methodological perspective:

Participants will gain knowledge about the relatively young and interdisciplinary field of multimodal argumentation studies, building on expertise from several disciplines and fields in the humanities. They will get to know and understand both qualitatively and discourse-oriented as well as quantitatively and corpus-based frameworks for the analysis of multimodal argumentative discourses.

Main value added from a practical perspective:

Participants will conduct their own analyses of several use cases of multimodal argumentation, building on newest multimodal analytical frameworks and applying the newly acquired knowledge and skills in individual and group work. They will also creatively present the results of this work in their own audio-visual artefact.

Learning objectives:

Knowledge
- Participants get to know and understand basic theories from the field of multimodal argumentation, including insights from Argumentation Studies as well as Multimodality Research.
- Participants get to know and understand theoretical and methodological approaches for characterizing combinations of semiotic modes in audio-visual argumentative discourses.

Skills, Practices:
- Participants describe and analyze (corpus) data of audiovisual quality based on current communication models.
- Participants implement and apply analytical methods for the valuation of multimodal argumentative artefacts involving (quantitative) annotation and (qualitative) analytical frameworks.
- Participants creatively deal with a complex analytical issue and individually present their results to a target audience.
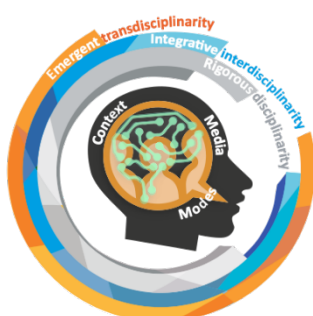
Researcher attitudes:
- Participants discuss and critically evaluate theoretical and methodological skills for analyzing multimodal argumentative discourses.
- Participants integrate knowledge and skills in newly constructed communicative contexts and handle their complexity.

Evaluation:

- Active participation in the hands-on work and analysis sessions in the entire course as well as a short presentation of the results at the end is required to obtain credits.
- An additional assignment to be submitted after the school will bring extra credits and will be assessed with a pass/ fail evaluation:

Participants create a short video (Instagram Reel, TikTok Video, YouTube short or similar; approx. 1.00-1.30min long) that provides arguments for knowledge about multimodal argumentation. This argumentation should be based on and present (1) an example of multimodal argumentation in social media and (2) the analytical results of an individually conducted (corpus) analysis of this example.