



AI for Critical Thinking: ELLIS Alicante Wins International NLP Competition

- Taking first place, ELLIS Alicante positions itself at the forefront of Natural Language Processing (NLP) research to foster critical thinking.
- The Critical Questions Generation Shared Task Competition is a significant event in the NLP community, emphasizing the role of Artificial Intelligence (AI) in fostering analytical skills and promoting responsible information consumption.

Alicante, Spain – April 14, 2025 – The ELLIS Alicante Foundation has emerged as the winner of the Shared Task on Critical Questions Generation, hosted at the 12th Workshop on Argument Mining, co-located with the 63rd Annual Meeting of the Association for Computational Linguistics, ACL 2025, to take place in Vienna. It is the most important annual gathering of the Natural Language Processing community. The winning team was led by ELLIS PhD student Lucile Favero under the supervision of Dr. Nuria Oliver, Scientific Director of ELLIS Alicante, and professors Juan Antonio Perez from the University of Alicante and Tanja Käser from EPFL, and with the help of intern student Daniel Frases.

A total of 13 international teams joined the competition to develop novel NLP methods to automatically understand argumentative texts from debates and generate three critical questions about them. These are not just any questions, but thoughtful questions that aim to probe the reasoning or logic behind the arguments, and identify flaws, such as fallacies or poorly constructed arguments.

The challenge posed to the teams is especially relevant in today's context, where large language models (LLMs) are used to understand, interpret, and generate text. Their widespread use by students has raised growing concerns about their potential to encourage superficial learning and erode the students' critical thinking skills. As a response, this challenge explores a different use of LLMs: rather than providing direct answers, the goal is to explore their value to help users ask better questions, namely critical questions that challenge vague or fallacious arguments to foster deeper reasoning. Furthermore, this approach intersects with ongoing research in NLP aimed at addressing misinformation. Instead of relying on LLMs to output factual information, this competition focuses on whether we can harness their generative capabilities to identify what is missing, questionable or unsupported in an argument.

ELLIS Alicante, a nonprofit private research foundation, is dedicated to advancing human-centric, ethical, and socially responsible AI. Winning this

competition underscores the foundation's commitment to developing novel NLP methods that place humans at their center, fostering critical thinking and contributing to combat misinformation.

For more information about ELLIS Alicante and its research initiatives, please visit www.ellisalicante.org.

About ELLIS Alicante | www.ellisalicante.org/ia

ELLIS Alicante is a non-for-profit private research foundation focused on **ethical and responsible Artificial Intelligence (IA)** for social good. Hence, it is also known as the **Institute of Humanity-centric AI**. ELLIS Alicante aims to be an international reference in **AI research by and for people**, by focusing on three areas of fundamental research in the intersection between humans and AI: 1) **AI that understands us**; 2) **AI that interacts with us**; 3) **AI that we trust**.

ELLIS Alicante is part of the European network of excellence in Artificial Intelligence ELLIS (European Laboratory for Learning and Intelligent Systems - www.ellis.eu), being the only ELLIS unit dedicated exclusively to this area. ELLIS Alicante is the only ELLIS unit created from scratch, with the spirit of a scientific startup.

ELLIS Alicante was launched thanks to the vision, commitment, and generous financial support of the Generalitat Valenciana. It is also funded by other public and private institutions, including the Banc Sabadell Foundation, Balearia Foundation, Intel Corporation and Nippon Gases. The Foundation's work has won major awards including the 500k XPRIZE Pandemic Response Challenge by Cognizant (2021) and the Social Innovation Award (2022).

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