

Date	Slot	Title	Speaker	Abstract (ENG)
30/11	Mattina (9 -13)	<i>La correzione dei testi scientifici attraverso l'intelligenza artificiale generativa: criteri, limiti e implicazioni linguistico-educative</i>	Paolo Nitti (Università di Tallinn)	<p>In recent years, there has been a growing trend toward the use of generative artificial intelligence systems in academic and scientific writing. In the field of research, chatbots and automated linguistic tools are increasingly being used to review articles, abstracts, research proposals, and manuscripts intended for publication. These systems are used to identify grammatical errors, improve textual cohesion, suggest stylistic revisions, and assess the clarity of argumentation, gradually taking on a role similar to that of a proofreader or language editor.</p> <p>This presentation offers a critical reflection on how artificial intelligence systems evaluate and correct scientific texts in the absence of specific prompts, examining the concepts of correctness, appropriateness, and quality in academic writing embedded in linguistic models. Particular attention will be given to the distinction between linguistic correction, stylistic revision, and forms of hypercorrection.</p> <p>The lecture will present the results of an experiment based on a comparative analysis of corrections made by language models to texts produced by elementary, secondary, and university students. Finally, drawing on concrete cases, we will discuss the advantages and risks of using artificial intelligence in the revision of scientific texts, with applied examples. The discussion of the research findings and concrete examples will address several aspects: grammatical and syntactic correctness, textual organization, argumentative coherence, use of specialized terminology, management of bibliographic sources, and adherence to the conventions of scientific communication. Any discrepancies between the corrections proposed by the various models and those made by expert human reviewers will also be examined.</p> <p>The ultimate goal is to provide participants with theoretical and practical tools for the critical use of AI in academic writing, promoting informed editing practices and reflection on the educational, linguistic, and ethical implications of delegating the correction of scientific texts to generative artificial intelligence systems.</p>
	Pomeriggio (14-18)	<i>Coming Soon</i>	Alberto Puliafito (Slow News)	Coming Soon
01/12	Mattina (9 -13)	<i>Generative AI for Analysing and Assessing Research: Bias and Variation in Natural Language Processing</i>	Francesco Osborne (Università di Milano Bicocca)	<p>Generative AI is increasingly used to support research, from conducting literature reviews to evaluating scientific papers and grant proposals. This lecture examines these applications, discussing their methodological foundations, current capabilities, limitations, and implications for scientific research. It is organised in four parts: 1) generative AI for literature reviews, from tools supporting search and screening to systems generating analytical syntheses with traceable sources; 2) taxonomies and knowledge graphs as structured representations of scientific knowledge, and their role in grounding and evaluating AI-generated outputs; 3) applications built on these representations, including question answering over scholarly data and research hypothesis generation; 4) the use of language models in peer review and research assessment, examining their potential benefits, limitations, and risks. Each part introduces key concepts and discusses examples from recent research, with particular attention to reliability, transparency, and evaluation. The aim is to equip participants with the conceptual and methodological tools to critically assess these approaches and understand when and how they can be meaningfully integrated into their own research.</p>
	Pomeriggio (14-18)	<i>Linguistica computazionale e IA generativa: un'introduzione</i>	Rachele Sprugnoli (Università di Parma)	<p>This lecture provides an introduction to computational linguistics and Large Language Models (LLMs), which are topics that will be covered in greater detail in subsequent lectures. The first part will cover the fundamental concepts and approaches of the discipline, with a particular focus on the main linguistic tasks and the methods used to address them. Subsequently, the focus will shift to LLMs to explore their principles of operation, prompting techniques, and potential applications, as well as the challenges and social and cultural implications they raise.</p>

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02/12	Mattina (9 -13)	<i>Coming Soon</i>	Elisabetta Fersini (Università di Milano Bicocca)	Coming Soon
	Pomeriggio (14-18)	<i>Un'introduzione Teorica e Pratica ai Neural Language Models: Valutazione ed Esplorazione delle loro Abilità Linguistiche</i>	Alessio Miaschi con Cristiano Ciaccio (ILC-CNR Pisa)	The field of Natural Language Processing (NLP) is experiencing a period of significant progress, largely due to the shift from traditional approaches to neural network-based algorithms. Among these, Large-scale Language Models (LLMs) have demonstrated exceptional performance across a wide range of tasks and in generating coherent and contextually appropriate text. However, this progress goes hand in hand with reduced transparency, making it increasingly difficult to understand how these models operate and what capabilities they possess. The seminar will offer an overview of language models and recent advances in this field, with a particular focus on studies in recent years that have examined the linguistic abilities implicitly encoded by LLMs and how these insights can improve our understanding of how these systems behave across various tasks and applications. In the second part, the session will shift to a more hands-on approach, providing participants with an introduction to how these models can be used and explored in practice.
03/12	Mattina (9 -13)	<i>Oltre il Prompt: apprendere, ragionare e fare ricerca con l'Intelligenza Artificiale</i> <i>Prompt-Based Learning, Natural Language Programming e Human-AI Co-Reasoning nelle Digital Humanities</i>	Giovanni Adorni (Università degli Studi di Genova)	The evolution of Generative Artificial Intelligence is transforming not only the tools available to researchers, but also the ways in which problems are formulated, interpretations are constructed, solutions are developed, and knowledge is validated. In this context, interaction with AI systems can evolve from the simple generation of content toward new forms of cognitive collaboration, in which humans and artificial systems contribute-with different roles and responsibilities-to the processes of learning, reasoning, and research. This lecture explores this transformation through three complementary approaches: Prompt-Based Learning (PBL), which emphasizes interaction with AI as a process of active learning, problem-solving, and metacognitive regulation; Natural Language Programming (NLPg), which uses natural language to formulate problems, specify constraints, structure procedures, and define verification criteria; and Human-AI Co-Reasoning, which introduces structured forms of collaborative reasoning, critical review, and validation of solutions. Particular attention will be given to the epistemological and methodological implications of these approaches for the Digital Humanities, addressing issues such as cognitive delegation, researcher autonomy, process traceability, and responsibility in knowledge production. The course includes an integrated workshop in which participants will experiment with applying these approaches to a research problem in the Digital Humanities, moving from its formulation to the design and testing of a possible solution through interaction with AI. The goal is to provide doctoral students with a critical and practical perspective for understanding and designing research processes augmented by Artificial Intelligence, in which human-AI collaboration helps expand the researcher's capabilities while preserving their epistemic control, autonomy of judgment, and scientific responsibility.
	Pomeriggio (14-18)	<i>Bias and Variation in Natural Language Processing</i>	Alan Ramponi (Fondazione Bruno Kessler)	Recent developments in natural language processing (NLP), facilitated by the advent of Large Language Models (LLM), have led to widespread adoption of language technologies across a wide range of tasks. Despite the great performance in NLP benchmarks, NLP systems developed without due care reflect and amplify harmful societal biases, leading to gender-biased outputs, greater exclusion of minorities, and misrepresentation of languages and cultures. In this lecture, I will examine the origins, manifestations, and consequences of bias in NLP. After introducing preliminary concepts for understanding how NLP and machine learning work, I will present research efforts aimed at identifying and mitigating bias in NLP and the best practices in the field, focusing specifically on fairness and inclusiveness of language and its variations. Finally, I will show how to identify biases and ensure that linguistic variation is represented in corpora using a publicly-available tool. Participants will gain a deep understanding of both the opportunities and the limitations of current NLP, and how to deal with the latter effectively.

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04/12	Mattina (9 -13)	<i>Il valore del disaccordo: Approcci prospettivisti all'annotazione linguistica</i>	Valerio Basile (Università di Torino)	The creation of Natural Language Processing (NLP) resources often involves human participants-“annotators”-who express their understanding or perception of a given linguistic phenomenon under study. The judgments provided by annotators can exhibit significant internal variability: language is ambiguous and its interpretation is subjective, to the point that multiple interpretations may be valid for the same data. From this perspective, focusing on how to address disagreements in annotations is of fundamental importance for any data collection activity, in order to clarify when divergent human opinions affect the quality of the final resource or whether they represent different (but equally valid) perspectives on understanding the text. This module introduces the “perspectivist” approach to data collection and the modeling of subjective linguistic phenomena - a methodology that accounts for the diversity of human annotations. The module covers potential sources of disagreement to consider when designing annotation schemes, strategies for evaluating data quality within a perspectivist framework, and methods for integrating disagreement into machine learning processes for linguistic models.
	Pomeriggio (14-18)	<i>Le macchine possono fare nuova matematica? Come l'IA sta cambiando la ricerca e il nostro rapporto con la conoscenza</i>	Michele Ginesi (Istituto Europeo di Oncologia)	Until a few years ago, Large Language Models made trivial arithmetic errors. Today, AI systems are capable of solving problems from the International Mathematical Olympiad and proposing solutions to problems that have remained unsolved for decades. This rapid transformation is changing not only the tools available to mathematicians, but also the way we conceive of discovery, proof, understanding, and the attribution of credit. However, these developments also raise questions and controversies. AI systems can produce convincing but false arguments; the use of copyrighted material in their training is a subject of debate; and distinguishing human contributions from those of machines-and acknowledging the role of prior work-can be difficult. Recently, OpenAI announced that it had solved a Millennium Problem, in addition to releasing more than seven hundred papers. This event, described by some leading mathematicians as “cataclysmic,” has sparked a debate on how to adapt to these systems. Does a proof generated by AI contribute to knowledge even if it is incomprehensible to a human? To whom should credit for this result be given, and who would be held responsible for an error? These questions extend far beyond mathematics. They concern the production and understanding of knowledge, authorship, the recognition of contributions, and the role of human understanding in research. In this seminar, we will explore how mathematical research has begun to utilize AI, evolving from a simple computational tool to a means of supporting the proof of results. We will examine how AI is already being used in mathematical and scientific research, what recent developments truly demonstrate, and what limitations remain. Finally, we will discuss how this technology could change not only research but also education and our relationship with knowledge itself.