

FORMA seminar

By **Georg Gottlob** (*Università della Calabria*)

Psychoanalysis of ChatGPT

Abstract

ChatGPT and other LLMs are the most recent major outcome of the ongoing AI revolution. The talk begins with a brief discussion of such (text-based) generative AI tools and showcases instances where these models excel, namely when it comes to generating beautifully composed texts. We then discuss shortcomings of LLM, especially where they produce erroneous information. This is often the case when they are prompted for data that are not already present in Wikipedia or other authoritative Web sources. To understand why so many errors and "hallucinations" occur, we report about our findings about the "psychopathology of everyday prompting" and identify and illustrate several key reasons for potential failures in language models, which include, but are not limited to: (i) information loss due to data compression, (ii) training bias, (iii) the incorporation of incorrect external data, (iv) the misordering of results, and (v) the failure to detect and resolve logical inconsistencies contained in a sequence of LLM-generated prompt-answers. In the second part of the talk, we give a survey of Chat2Data project, which endeavors to leverage language models for the automated verification and enhancement of relational databases, all while mitigating the pitfalls (i)–(v) mentioned earlier.

Bio

Georg Gottlob is a Professor of Computer Science at the University of Calabria. Until recently, he was a Royal Society Research Professor at the Computer Science Department of the University of Oxford, a Fellow of St John's College, Oxford, and an Adjunct Professor at TU Wien. Long time ago, he was a CNR-researcher at the University of Genoa. His interests include knowledge representation, database theory, query processing, web data extraction, and (hyper)graph decomposition techniques. Gottlob has received the Wittgenstein Award from the Austrian National Science Fund and the Ada Lovelace Medal (UK). He is an ACM Fellow, an ECCAI Fellow, a Fellow of the Royal Society, and a member of the Austrian Academy of Sciences, the German National Academy of Sciences, and the Academia Europaea. He chaired the Program Committees of IJCAI 2003 and ACM PODS 2000 and is on the Editorial Boards of JACM and JCSS. He was a founder of Lixto, a web data extraction firm acquired in 2013 by McKinsey & Company. In 2015 he co-founded Wrapidity, a spin out of Oxford University based on fully automated web data extraction technology developed in the context of an ERC Advanced Grant. Gottlob then co-founded the Oxford spin-out DeepReason.AI, which provided knowledge graph and rule-based reasoning software to customers in various industries. Both Wrapidity and DeepReasonAI were acquired by Meltwater, an internationally operating media intelligence company.



Valletta Puggia (Via Dodecaneso, 35)
Room 322

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<https://forma.unige.net>

