



Seminar Hora Informaticae

Institute of Computer Science, Prague

Tuesday, March 17, 2026, 13.30 – 15.30 (1.30 – 3:30 PM) CET

Meeting Room 318, Address: Pod Vodárenskou věží 2, Prague 8

Meeting ID: 914 0834 4018, Passcode: 668534



<https://cesnet.zoom.us/j/91408344018?pwd=x2Qlz4F42BxlMSmWc1HOwHHA7Uw7PN.1>

Rudolf Rosa (Institute of Formal and Applied Linguistics, Charles Univ., Fac Math & Phys).

How to turn a Transformer model into a modern LLM? Instruct, RLHF, RAG, and others.

The core of each Large Language Model is a standard Transformer-based language model. However, the success and capabilities of current LLMs come not only from the strong base models, but also from applying a range of other techniques and tricks, such as RLHF (reinforcement learning with human feedback), RAG (retrieval-augmented generation), Instruction tuning, and other. In the talk, I will explain these three techniques in more detail, and I will also briefly mention various other methods that are commonly used.

References:

[1] Training language models to follow instructions with human feedback.

<https://arxiv.org/abs/2203.02155>

[2] A Survey of Reinforcement Learning from Human Feedback. <https://arxiv.org/abs/2312.14925>

[3] Retrieval-Augmented Generation for Large Language Models: A Survey.

<https://arxiv.org/abs/2312.10997>

[4] Towards Reasoning in Large Language Models: A Survey. <https://arxiv.org/abs/2212.10403>

Rudolf Rosa (<https://cv.nikde.eu/>) is a computational linguist and robopsychologist. He studied at the Institute of Formal and Applied Linguistics at Charles University in Prague, where he currently works as an academic researcher. In recent years, he has focused on generating text using language models. As part of the THEaiTRE project, he participated in the creation of the first Czech theatre play with a script generated by artificial intelligence. He is also a member of the AI the Context group, which focuses on artificial intelligence in the context of various disciplines. He leads the EduPo project, in which language models are trained to generate poems in Czech language, with a goal of devising a comprehensive educational web application for studying Czech poetry. He participates in the interdisciplinary project "Human, Soul, AI", which explores the relationships between man, modern technologies and religious concepts. He has also worked on multilingual and crosslingual language processing, morphological and syntactic language analysis, automatic machine translation or interpretation of trained artificial neural network models.

HORA INFORMATICAЕ (meaning: TIME FOR INFORMATICS) is a broad-spectrum scientific seminar devoted to all core areas of computer science and its interdisciplinary interfaces with other sciences and applied domains. Original contributions addressing classical and emerging topics are welcome. Founded by Jiří Wiedermann, the seminar is running since 1994 at the Institute of Computer Science of the Czech Academy of Sciences in Prague.

<https://www.cs.cas.cz/horainf>