

JUNIOR NOMATEN SEMINAR:

Presentation of the subgoal search method for complex reasoning tasks

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LINK: <https://gotomeet.me/ncbjmeetings/nomaten-seminar>

Abstract:

Humans excel in solving complex reasoning tasks through a mental process of moving from one idea to a related one. Inspired by this, we propose Subgoal Search (kSubS) method. Its key component is a learned subgoal generator that produces a diversity of subgoals that are both achievable and closer to the solution. Using subgoals reduces the search space and induces a high-level search graph suitable for efficient planning. We show that a simple approach of generating k-th step ahead subgoals is surprisingly efficient on three challenging domains: two popular puzzle games, Sokoban and the Rubik's Cube, and an inequality proving benchmark INT. The method achieves strong results including state-of-the-art on INT within a modest computational budget.

Bio:

Dr. Tomasz Odrzygóźdź is currently a postdoctoral researcher at AWARElab led by dr hab. Piotr Miłoś. He completed his Ph.D. in theoretical mathematics at the Polish Academy of Sciences in 2019 in the area of geometric group theory. After Ph.D., Dr. Odrzygóźdź transferred to the field of AI. His current research interests focus on automated reasoning systems e.g. automated theorem proving.