

To Search or To Gen?

Exploring the Synergy between Generative AI and Web Search in Programming



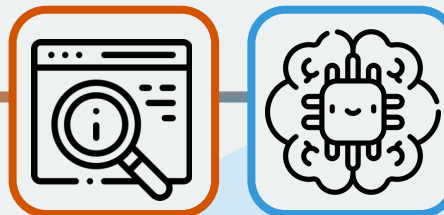
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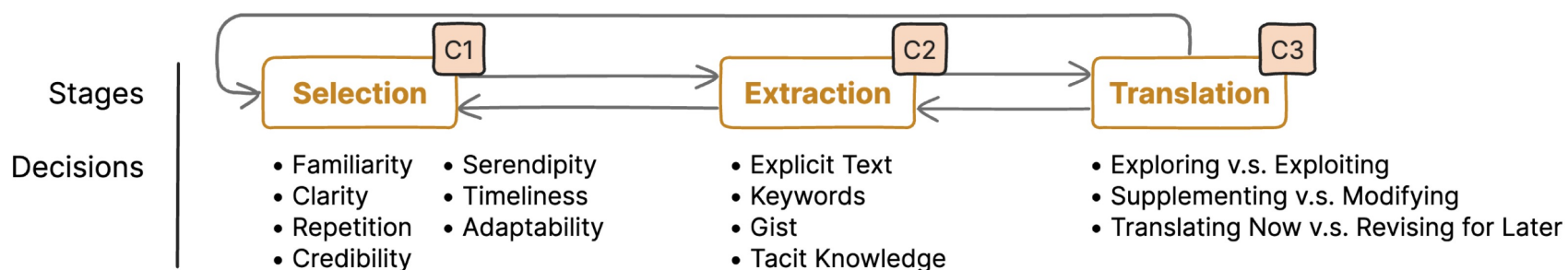


Motivation

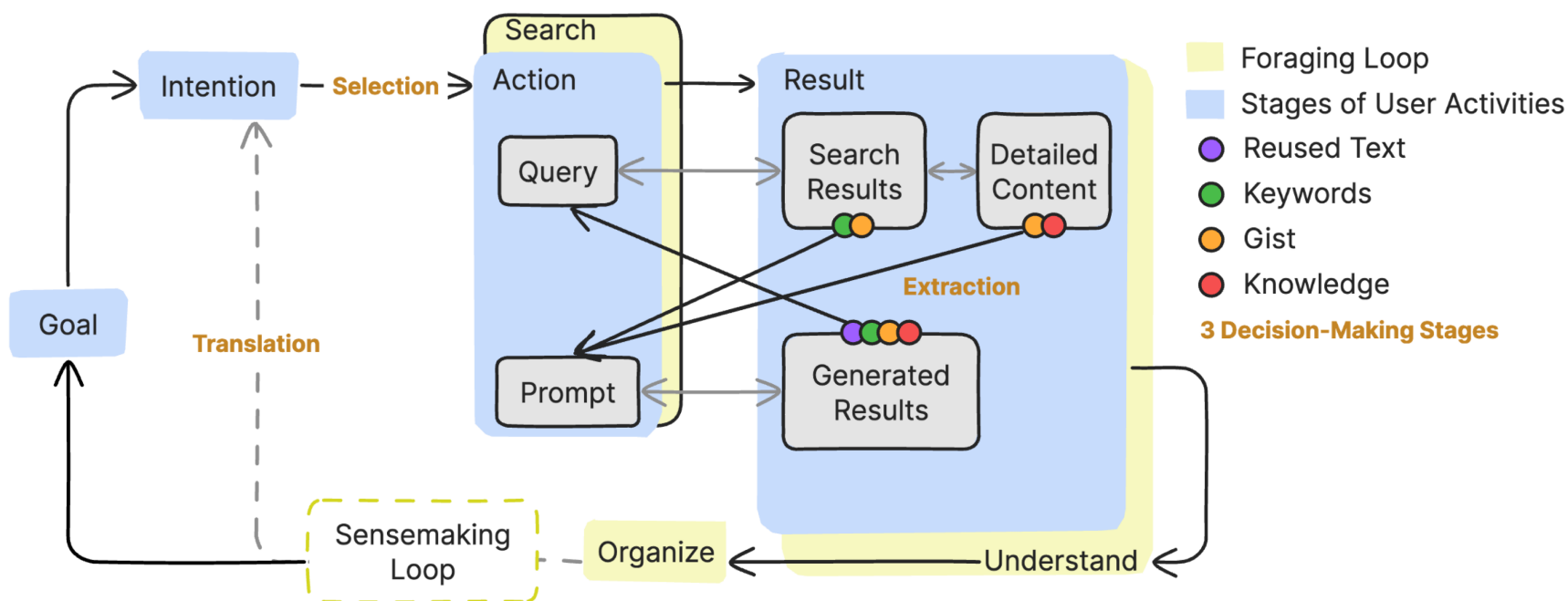
The convergence of generative AI and web search is reshaping the way programmers find information and solve programming problems. However, due to a lack of understanding of their interplay in the information-seeking process, programmers tend to view them as substitutes for each other rather than synergistic tools. This paper seeks to understand how programmers utilize both tools to seek information to solve programming problems.

Study & Findings

We interviewed N=8 experienced programmers to understand their workflow of using both tools and revealed three key decision-making stages in their workflow, which involve selecting between two tools, identifying the type of knowledge to be extracted, and translating the knowledge into prompts for the next iteration.



Our proposed model illustrates how programmers can switch between web search or AI, extract various types of knowledge from the results, and then translate that knowledge into natural language prompts, iterating these steps to refine their intention toward their goals.



This research offers insights into reconciling web search with generative AI in information seeking for solving programming problems, guiding future design efforts. See our paper for more details.

