**The impact of code summarization on code retrieval performance.**

SE-D-6

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This project explores a novel code retrieval method to support software reuse. Rather than retrieving code directly through queries, our approach uses large language models (LLMs) to generate natural language summaries of code snippets and match them to queries. We assess whether summary-based retrieval outperforms traditional approaches using code or documentation. Based on the CodeSearchNet dataset, we tested multiple LLMs (LLaMA, GPT, CodeT5, DeepSeek) for summarization. Each model produced a dataset of code samples, queries, and corresponding summaries. To measure retrieval quality, we used the CoIR competition model, a strong baseline from the Code Search track of the NeurIPS CoIR 2022 challenge. We report comparative evaluation results with DeepSeek as the best performing model and the best CoIR competition systems.

**Keywords**:code retrieval, code summarization, codesearchnet, coir, deep learning, large language models, software reuse.