Can we make ChatGPT write chaincode for us?

Automated programming for other blockchain platforms is an already emerging topic, but Fabric has not been really addressed yet. This is an experimental mentorship with equal weight in research and hands-on coding, with the following goals.

- To review existing examples and approaches of automated programming for smart contracts of other platforms (i.e., Solidity).

- To explore the technically feasible options of automated chaincode programming for Hyperledger Fabric (incl. ChatGPT) and select one for further work.

- To formulate a chaincode specification style which “seems to work well enough” on a set of representative examples with automated programming.

(We don’t know yet what will work; One-shot or iterative? Requirement set or Behavior-Driven Development (BDD)? Conversational or formal specification? And so on.)

- To create support for translating the specification partially or fully to runtime verification code, which can wrap the chaincode implementation.

On the last point: starting from a specification is a tried and tested way to create verifier code either manually or automatically and is much easier to do correctly than creating the implementation correctly from a specification. We plan to keep this last point “classic”: i.e., no ChatGPT here. Specification-based verification criteria are usually amenable to development time verification, too (with static analysis, model checking, etc.).