**Project Idea: Quality Assurance Mutation Testing Tool**

**Name**: X-Mutest

**Proposal**: My idea is to design and implement a tool that introduces controlled mutations into Python source code and reports a mutation to evaluate the effectiveness of the test suite.

**Stakeholders**: Software Developers, QA Engineers, Test Engineers, DevOps, CI/CD Engineers, students. In summary anyone building or testing software who cares about test reliability.

**Why:** I’m a software engineering major with a certificate in quality assurance, and I would like to make a project related to QA roles and concepts with the help of an AI chatbot (Open AI, Chat GPT) I research ideas and how those ideas could help me get a better chance to not only develop QA knowledge but also enhance chances to find a job.

Researching more about mutation tools and their capabilities I realized how mutation tools can take unit testing to the next level by showing if the test created are effective or not since traditional test coverage only shows what code is executed.

Mutation testing is a white-box testing technique used by companies like Netflix and Goole.

Ultimately building this tool will demonstrate strong knowledge of compilers, automation, and testing applicable to software engineer and QA engineer roles.