

- Sound equivalence checker
 - A proof guarantees equivalent *observable behaviour* for all inputs (memory state, etc.)

- Translator/Optimizer = Traditional Compiler (e.g., gcc)
 - Application in safety-critical sectors
 - Aerospace, Defence, Nuclear, Energy grids, Automotive, Rail, Financial systems, ...
 - Examples of open-source bugs found: https://compiler.ai/bugs/

- Translator/Optimizer = LLM
 - Translation and optimization assistant

- Ultimate goal
 - Superoptimizer (see next page)

Superoptimization

