C-LASS: Cybersecurity Learning with AI for Static Systems

Team: Sean Golez, William Barnett, Kayden Vicenti, Colton Leighton

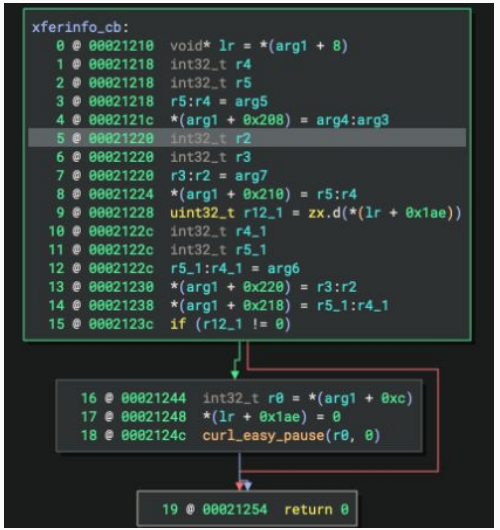
CS Faculty Mentor: Scott LaRocca

Our Client

Lan Zhang Assistant Professor

Needs and motivations

Teaches software engineering courses and sought out for a tool to help students in understanding static analysis CTF challenges.



Static Analysis Capture-The-Flag (CTF) Challenges

- Involves examining programs and files without executing them to find hidden flags
- Plays a central role in identifying security vulnerabilities in code
- Difficult for students to complete

Why Current LLMs Struggle as Tutors

Problem 1

Lack of AI models that provide correct and precise explanations.

Problem 2

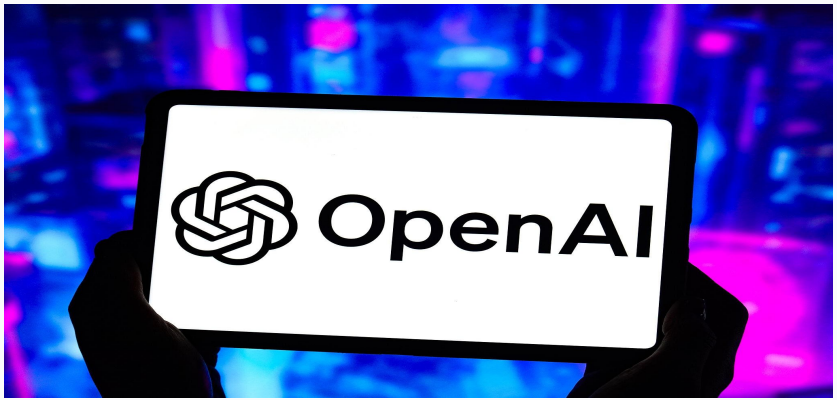
Sparse coverage of static analysis concepts in general-purpose models

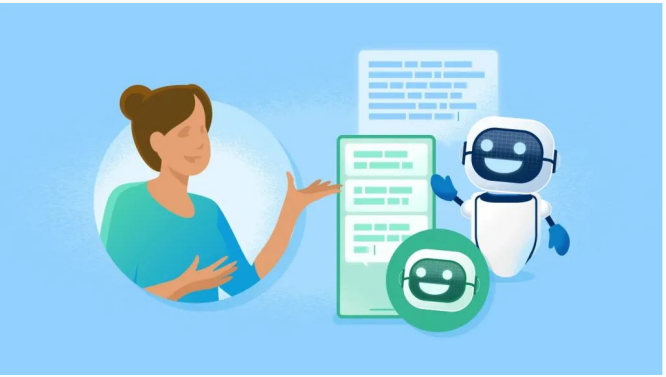
Problem 3

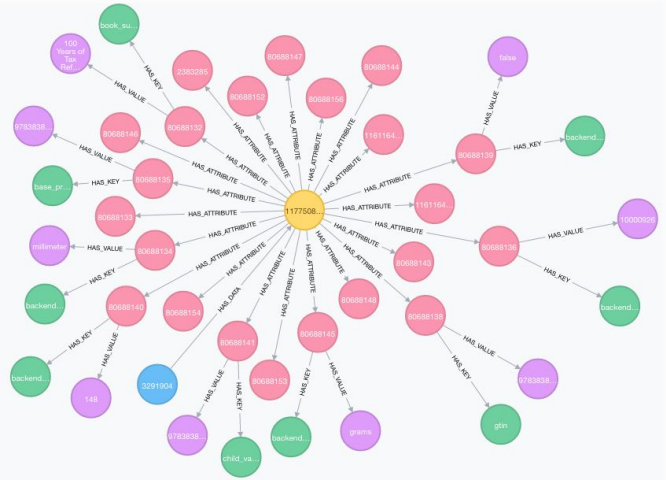
Limited support for inquiry-based learning

Problem 4

No structured explanation path







The solution

An **interactive AI tutoring agent** designed specifically to answer student questions about static analysis CTF challenges

Includes two main interfaces:

1. A chatbot for students to prompt the LLM
2. A visual editor with a knowledge graph for teachers to curate what information/documents that the LLM can utilize

Key Outcomes:

1. An accessible tutoring assistant for students.
2. Structured LLM database that teachers can tailor to class learning outcomes.

THANK YOU