Minutes of Meeting 1/22/2025

Project Name: CYBER1-CodeVersion
Client Name: Tashi Stirewalt
Date: Jan 22, 2025
Time: 3:30PM - 4:30PM
Location: Microsoft Teams
Attendees: Tashi Stirewalt, Bryan Frederickson, Samantha Brewer

Client Representative: Tashi Stirewalt
Project Team Members: Bryan Frederickson, Samantha Brewer

1. Agenda

Discuss next steps, now that Code Property Graphs were found unsuitable for our project. Find an alternative for manipulating Python source code.

2. Meeting Summary

Introduction:
Bryan Frederickson and Samantha Brewer are seniors at WSU serving as developers for Tashi Stirewalt for the CYBER1-CodeVersion project.
This project is meant to help signature-based intrusion detection by being able to generate semantic copies of known code, to better identify malicious software that has been changed to avoid detection.

Client's Requirements:
Much more manipulation of the source code is required for this semester, instead of just the variable and function renamer. Need a GUI with adjustable parameters for generation.

Key Discussion Points:
Discussion Point 1: Code Property Graphs are largely immutable and there is no way to convert back into source code for now. Python is also only experimentally supported by CPG libraries.
Discussion Point 2: Control Flow Graph does not have many advantages over original CST for manipulation, so stick with CSTs.
Discussion Point 3: While it is a research project, deliverables are needed. A GUI that communicates the changes to the source code in an understandable way is planned for development this semester.
Discussion Point 4: Improve preexisting variable and function renamer to no longer rely on AI model, potentially by translating into other languages or swapping with synonyms.
Discussion Point 5: Add more manipulation e.g. adding bloat, change constructs such as swapping for and while loops, swapping out function calls with the function definition and vice versa.

Decisions Made:

Action Items:

Action Item 1: Add translation and synonym manipulation to variable and function renamer - Due by next meeting, Jan 28, 2025

Action Item 2: Work on adding extra manipulations from Discussion Point 5 - Due by next meeting, Jan 28, 2025

3. Project Milestones Discussed

Too early in the project for firm dates, see above Action Items.

4. Next Steps

Once variable renamer is updated, move on to new manipulations and developing a GUI.

5. Next Meeting

Date: Jan 29, 2025
Time: 3:30PM - 4:30 PM
Location: Microsoft Teams