

EE / CprE / SE 492 Bi-Weekly Report 5

Project title: Knowledge Graphs for Cybersecurity Reasoning

04/08/23- 04/21/23

Group number: sdmay23-01

Client & Advisor: Benjamin Blakely

Team Members:

Brandon Richards - *Frontend Development Lead*

Micah Gwin - *Python/ML Development*

Alice Cheatum - *Programmer*

Nicklas Cahill - *Tester/Programmer*

Michael Watkins - *Python/ML Development*

Carter Kitelinger - *Client Interaction*

Summary

Frontend version 1 was released to production this week, as well as the scraper running on a schedule on production. Improvements to the parser were made to allow for multi-threading and containerization. More training data was annotated to increase model scores.

Past Two Week Accomplishments

- Frontend – Brandon
 - Migrate from Next.js framework to vanilla React
 - Create visual query builder for users to build queries for our Knowledge Graph with a visual graph editor.
 - Add list of example queries for users to use.
 - Create AWS API Gateway route that interfaces for Neo4J EC2.
 - Call AWS API Gateway from frontend with Cypher query.
 - Display returned nodes and edges from Neo4J.
- Pipelined parser – Michael
 - Input, parsing, and output threads
- Parser container conversion – Micah

- Build new Dockerfile to pull from lambda python base and add our code/dependencies.
- Modify pipeline to rebuild container with caching whenever something parser related changes.
- Pipeline also pushes container to AWS ECR (Elastic Container Repository) where it can be referenced directly by parser lambda terraform.
- Training Data Annotation – Alice
 - Annotated new articles for training data
 - Updated old annotations to fix issues
- Article Annotation - Carter

Pending Issues

- No issues currently pending.

Individual Contributions

Name	Hours past two weeks	Hours cumulative
Brandon Richards	22.75	114.25
Micah Gwin	15	78
Alice Cheatum	5	59.25
Nicklas Cahill	3	40.33
Michael Watkins	15.3	30.3
Carter Kitelinger	1.25	46.45

Summary of weekly advisor meeting

Updated advisor with progress and confirmed we have no outstanding questions at this point.

Plans for Coming Two Weeks

- Get pipelined parser running on AWS
- Prepare for end of SE 492, including demo, slide deck, and final report.