

Weekly Progress Report - 1

Section 1: Activities and Progress

1.1 Implementation/development progress

We had two meetings this week, one at the start and one at the end of the week. Those meetings are primarily dedicated to formulating our 10 functional and 5 non-functional requirements. We also discussed research goals and objectives from the outcome of our client meeting with Yongzheng Xie last week. Currently, we are focusing on gathering data and the research component of this project. I was able to obtain a more refined understanding of the project scope and what is required. I had a brief look at global vectors for defining representation schemes for code tokens and the corresponding abstract syntax to extract semantic relations between keywords and syntax. During our latest meeting, we allocated tasks to each member of our group. Each member of our group would be responsible for a section of the research proposal. My part is to define the data we need for our research questions.

Section 2: Issues and Challenges

A challenge I faced this week was the overwhelming amount of new material I presented with regarding vector processing, word representation, and model training. I was not able to establish a concrete understanding yet, therefore a little more time is required for me to get comfortable with concepts and domain knowledge.

Section 3: Implementation Goals

My goal for next week is to finish my assigned task: define data used in our training set for our evaluation framework. I will be extracting source code examples from NDV for our specified vulnerability. Once the data has been found I will continue learning about vector processing and model training so I could convert our data set into a vector representation to be used for our training set. I will also be exploring the different tools available online as mentioned by Yongzheng Xie such as Word2vec, GloVe, and code sensor. I will prepare a written report of my findings and challenges to encounter to present for our upcoming client meeting. I will also be looking for other resources online where a similar study was conducted. Those resources would be used for reference purposes.