E E/Cpr E/S E 491 Weekly Report 2

Intelligent Code Editor

Client & Advisor: Ali Jannesari
sdmay20-46
- John Jago – Software Lead
- Keaton Johnson - Systems Lead
- Jon Novak – Machine Learning Lead
- Matthew Orth - Meeting Facilitator
- Garet Phelps – Report Manager
- Isaac Spanier – Test Lead

Weekly summary

This week was focused on making decisions regarding the direction of the project, specifically what IDE to use, and how to do the natural language processing. Research was done on what sort of natural language statements we will be using in the Intelligent Code Editor.

Past week accomplishments

John Jago
- Set up initial project for the IntelliJ plugin in Hung's GitLab project.`

Keaton Johnson
- Natural Language - Code Dataset Research
  - Looked into pre existing datasets for code to natural language translation.
  - Researched existing implementations of natural language code editors.

Jon Novak
- Looking into possibility of using deep learning to construct a neural network
  - Looking into possibility of using a smaller dataset and having computer generate the rest.

Matthew Orth
- Natural Language Structure Research:
  - Researched common formats and structures that developers use to describe code
  - Brainstormed potential required natural language formats for the natural language
- OpenNMT-py Translation Server Setup:
  - Setup an OpenNMT-py translation server locally
  - Determined how to send and receive information to and from the translation server locally
- OpenNMT-py Research:
  - More in-depth research into OpenNMT-py

- ○ Created pros and cons list
  - ○ Compared against Hung's currently used NMT system

Garet Phelps
- ● Researched ways to write the natural language statements
  - ○ Figured Stack Overflow could be a good resource to see how people phrase coding concepts with natural language
  - ○ Found a dataset that contains every question on Stack Overflow with the python tag.

Isaac Spanier
- ● Researched preexisting datasets for the pseudocode options for our project.
  - ○ Looked into Kaggle
  - ○ Looked into the dataset subreddit
  - ○ Looked into a specific GitHub Repo with good natural language datasets

Individual contributions

Name	Contributions	Hours this week	Hours cumulative
John Jago	Set up initial project for the IntelliJ plugin in Hung's GitLab project.`	2	5
Keaton Johnson	● Looked into pre existing datasets for code to natural language translation. ● Researched existing implementations of natural language code editors.	2	6
Jon Novak	● Looking into possibility of using deep learning to construct a neural network	2	5
Matthew Orth	● Natural Language Structure Research ● OpenNMT-py Translation Server Setup (local) ● OpenNMT-py Feature Research	6	36
Garet Phelps	Researched how to phrase NL statements	2	7
Isaac Spanier	Looked into creating a dataset and researching existing one for our project.	2	6

Plans for the upcoming week

John Jago
- ● Work on the plugin

Keaton Johnson
- ● Research how we want to phrase our natural language statements

Jon Novak
- ● Work on openNMT-py

Matthew Orth
- ● Work on openNMT-py

Garet Phelps:
- ● Research how we want to phrase our natural language statements

Isaac Spanier
- ● Research how we want to phrase our natural language statements

Summary of weekly client/advisor meeting

Met with Dr. Jannessari on 9/30/19. We demonstrated the basic IDE plugins we made for VScode and IntelliJ. After some discussion we decided we will be moving forward with the IntelliJ extension. We described the results of our research on existing tools, specifically OpenNMT-py. Our task for this next sprint is to unify all these concepts we've been learning about into the base of the project.

Met with Hung on 10/4/19. We shared what we had accomplished so far. The goal for this week is to figure out how we want to phrase the natural language statements, solidify the plugin base for the ICE, and work on getting openNMT set up.