Appendix I – User Guide

Follow the following steps to use this paper as a guide to classify the bug reports of their corresponding source files using CNN.

- The dataset file must be XML format.
- If you wish to use another dataset, change the file path in the Dataset.py file.
- In case of another dataset, customize the dataset elements in your XML file to their corresponding elements in the Dataset.py file. (e.g., an additional field which exist on your dataset, or the elements have different name, etc.)
- Depending on your chosen data to be preprocessed, customize it in the BugReportPreprocessing.py file. (e.g., applying pre-processing on something other than summary, description, or files of the bug reports.)
- The training X and Y values must be of the same size.
- The user must install the required packages so the code can run smoothly.
- Open jupyterlab and create a new .ipynb file and copy paste the contents of CNN_code.py into this file to be able to run it.
- The project is uploaded on GitHub and available at:

https://github.com/Maii3zzat/BugLocalizationCNN

Appendix II – Installation Guide

This project was done on a 64-bit operating system (Windows 8.1 Pro) In the case of any missing library please use the same command “pip install” then the name of the library.

1. Download PyCharm community and follow its installation guide.
2. Download Python 3.8
3. Download glove.6B, the GloVe used in this project is ‘glove.6B.100d.txt’, make sure to match the embedding dimensions parameter to it. Available:

   https://nlp.stanford.edu/projects/glove/
4. Use the terminal in PyCharm to install Jupyter and write the following command:

   pip install jupyterlab
5. Open jupyterlab and create a new .ipynb file and install the following packages.
6. Sklearn:

   pip install --upgrade sklearn
7. NLTK:

   pip install --upgrade nltk
8. Tensorflow:

   pip install --upgrade tensorflow
9. Keras:

   pip install --upgrade keras
10. Matplotlib:

    pip install matplotlib
11. Inflection:

    pip install inflection
12. XMLtodict:

    pip install xmltodict