

Federal State Autonomous Educational Institution for Higher Education  
National Research University Higher School of Economics

Information Security

# BACHELOR'S THESIS

## RESEARCH PROJECT

### "UTILIZATION OF DEBUG INFORMATION IN THE CONTEXT OF HYBRID FUZZING TO IMPROVE THE ACCURACY OF ERROR DETECTION METHODS"

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## Annotation

Your annotation in English.

## Аннотация

Ваша аннотация на русском языке.

## Keywords

NLP, CV, DL, ML, RL, GAN,

# 1 Introduction

## 1.1 Citing

In this template you have to insert all your references in a special file called "bibliography.bib". It should be inserted in a special BibTeX format. It can be found easily via Google Scholar -> quotation sign -> BibTeX. You can find how it looks in ".bib" file.

After you have inserted your BibTeX citation into the ".bib" file, you can cite it in this document using Vaswani et al. [2017](#).

Or you can cite it in the following way: Kim et al. [2020](#).

## 1.2 Graphs

Graph [1.1](#) shows the results of the experiment.

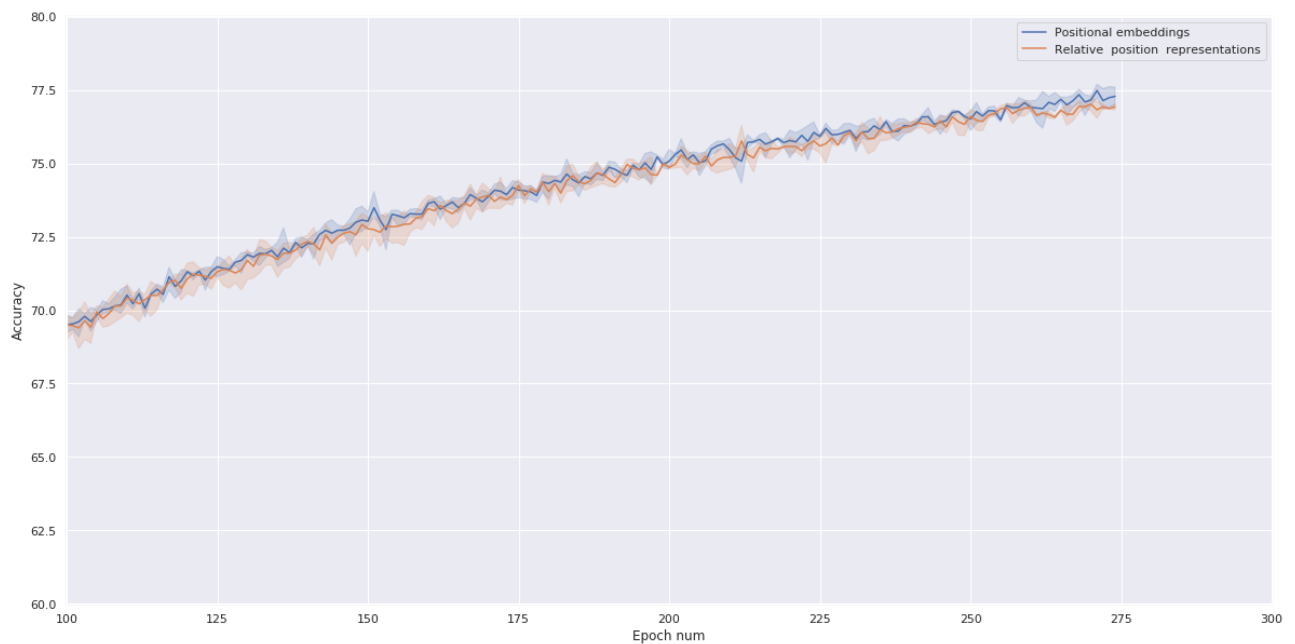


Figure 1.1: Graph sample

## 1.3 Tables

Table 1.1: Table example

|                 | Val           |               |               | Test          |               |               | nodes | subtokens |
|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|-------|-----------|
|                 | Prec          | Rec           | F1            | Prec          | Rec           | F1            |       |           |
| run #1          | 0.4894        | 0.3775        | 0.4263        | 0.4824        | 0.3683        | 0.4177        | 10029 | 179       |
| run #2          | 0.4887        | 0.3739        | 0.4237        | 0.4891        | 0.3724        | 0.4228        | 10039 | 177       |
| run #3          | 0.4820        | 0.3751        | 0.4219        | 0.4838        | 0.3677        | 0.4178        | 10037 | 180       |
| <b>mean</b>     | <b>0.4867</b> | <b>0.3755</b> | <b>0.4239</b> | <b>0.4851</b> | <b>0.3695</b> | <b>0.4195</b> |       |           |
| <b>variance</b> | 0.0041        | 0.0019        | 0.0022        | 0.0036        | 0.0025        | 0.0029        |       |           |

# References

1. Seohyun Kim et al. “Code prediction by feeding trees to transformers”. In: *arXiv preprint arXiv:2003.13848* (2020).
2. Ashish Vaswani et al. “Attention is all you need”. In: *arXiv preprint arXiv:1706.03762* (2017).