Zhensu Sun

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Research Interests

I'm a graduate student majoring in software engineering at Tongji University, China. My research interests are mining software repositories with various techniques like information retrieval and natural language processing. The goal of my research is to improve the coding efficiency of developers.

Education Background

Tongji University, Shanghai, China *Sep 2018 - Expected Mar 2021*
M.S. in Software Engineering, School of Software Engineering
GPA: 90.9/100
Awards: 2nd Prize at National Post-Graduate Mathematical Modeling Contest (2018)

Tongji University, Shanghai, China *Sep 2014 - Jun 2018*
B.S. in Logistic Engineering, School of Transportation Engineering (with Summa Cum Laude)
GPA: 4.2 / 5.0 (Top 3 of 28)

Research Experiences

Library Search using Dependency Graph *May 2020 - Present*

- Built an deep learning model with attention mechanism on subtitles of README files in libraries to obtain the representation vectors, which saves the memory cost on long documents.
- Applied graph neural network to the global dependency graph to update the vectors (In progress)

Deep Learning based Semantic Code Search *Aug 2019 - May 2020*

- Proposed a deep learning based semantic code search model, PSCS, and obtained a better understanding of code structure, which outperforms state of the art by 19.2% in MRR.
- Demonstrated the importance of code structure in code search tasks through ablation experiments.

Requirement based Library Recommendation *Dec 2018 - Aug 2019*

- Identified a new perspective for library recommendation: textual requirement description based library recommendation for the software project, which could avoid two key problems in existing models including requirement insufficiently matching and cold-start problem
- Proposed a model based on Seq2seq to recommend available third-party libraries with a SuccsessRate@10 of 90.4%, which proves that this perspective has practical values.

Publications

- **Zhensu Sun**, Yan Liu, Ziming Cheng, Chen Yang, Pengyu Che. "Req2Lib: A Semantic Neural Model for Software Library Recommendation". Published in SANER 2020.
- **Zhensu Sun**, Yan Liu, Chen Yang, Yu Qian. "PSCS: A Path-based Neural Model for Semantic Code Search". Under Submission.

Skills

- **Programming Languages**: Python, JavaScript, SQL
- **Frameworks**: Pytorch, Pandas, Numpy, Scikit-Learn, Node.js, React.js.
- **English**: IELTS: Listening: 7.5, Reading: 8.5, Writing: 6.5, Speaking: 6.0, Overall Band Score: 7.0