Yuntianyi Chen

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EDUCATION BACKGROUND

B.S. in Wuhan University, China   2016.09--Present

School of Computer Science   GPA: 89.5/100 (3.77/4)

Advisor: Jifeng Xuan

EXPERIENCES

Centre of Software Testing, Analysis and Reliability (CSTAR)	Member	2017.10--Present
Advanced Software Engineering Course	Teaching Assistant	2017.09--2017.12
27th IEEE International Conference on SANER	Sub-reviewer	2019.11

PUBLICATIONS

[1] <u>Yuntianyi Chen</u>, Yongfeng Gu, Lulu He, and Jifeng Xuan. "Regression Models for Performance Ranking of Configurable Systems: A Comparative Study". In *the Annual Conference on Software Analysis, Testing and Evolution (SATE), 2019*

[2] Yongfeng Gu, <u>Yuntianyi Chen</u>, Xiangyang Jia, Jifeng Xuan. "Multi-Objective Configuration Sampling for Performance Ranking in Configurable Systems". In *the Asia-Pacific Software Engineering Conference (APSEC), 2019*

RESEARCH EXPERIENCES

Heterogeneous Transfer Learning on Software Configuration

- Presented a novel algorithm to predict the configurations' performance and rank the configurations of software systems when we have little labeled data in one software system (target) but have enough data in another irrelevant software system (source).
- This method is distinctive for it can be applied to any two configurable software systems even though they are from completely different fields and have different numbers of features.
- Conducted a large experiment on 208 transfering pairs of 25 software systems. The result shows a 75% average accuracy to successfully rank better configurations to the front than the baseline.
- The goal of this research is to reduce the measurement cost in the sampling process by using the labeled data we have alredy got, especially for those large software systems, which takes lots of resources and time in one measurement.
- 1st author, the paper is in composing.

Refinement on Performance Ranking Models of Software Configuration

- Introduced a algorithm to learn the ranking rule from the labeled data. Proposed a common framework to refine the ranking of configurations based on the ranking rule we learned before and their performances we predicted through machine learning algorithm.
- Conducted a large experimental evaluation on 36 scenarios of 17 subject systems. The result shows over 30 scenarios can obtain better configurations after our refinement.
- 2nd author, the paper is in composing.

Multi-Objective Configuration Sampling in Configurable Systems

- Proposed a sampling method, which uses multi-objective optimization to minimize the number of samples we need to measure while maximizing the ability to rank good configurations to the front according to the Pareto optimization. The research aims to balance the trade-off between the measurement cost and the ranking ability in the performance ranking problem.
- 2nd author, the paper was accepted by APSEC, 2019.

Comparative Study on Regression Models in Performance Ranking

- Conducted a comparative study on the common regression models used in performance ranking of software configuration research. The research is the first one that compares the regression models in terms of their ability to find good configurations and the measurement cost of sampling.
- 1st author, the paper was accepted by SATE, 2019.

Wireless Printing Under the Internet of Things

- Proposed a project that one can upload the file to the server and go to any printer connected to the server at any time to print what he/she needs. Presented an automatic scheduling algorithm to schedule the customers according to their distances from printers and queuing conditions.

HONORS & SCHOLARSHIPS

- Scholarship for Outstanding Students（top 15%）in 2016-2017
- Scholarship for Outstanding Students（top 10%）in 2017-2018 and 2018-2019, respectively
- Chinese Undergraduate Computer Design Contest (Region Level, Second Prize) in 2018

SKILLS AND INTERESTS

- Research interests: software configuration, transfer learning, evolutionary computation, defect prediction
- Language skills: C/C++, Python, Matlab, Java, JavaScript, HTML, Latex