

Yuntianyi Chen

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EDUCATION BACKGROUND

B.S. candidate, Wuhan University, China

2016.09--Present

School of Computer Science

GPA: 3.77/4.0 (89.5/100)

Advisor: Jifeng Xuan

PROFESSIONAL EXPERIENCES

Centre of Software Testing, Analysis and Reliability (CSTAR)

Member

2017.10--Present

Advanced Software Engineering Course

Teaching Assistant

2017.09--2017.12

PUBLICATIONS

- [1] Yuntianyi Chen, 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

RESEARCH EXPERIENCES

Heterogeneous Transfer Learning on Software Configuration

- Presented a novel algorithm to predict the configuration's performance of one software system when we have little labeled data in this software (target) but have enough data in another irrelevant software (source). This method can be applied to any configurable software system even though they are from completely different fields and have different number of features.
- Conducted a large experiment on 208 transfer pairs of 25 software systems. The result shows a 75% average accuracy to successfully find better configurations than the baseline.
- The goal of this research is to reduce the measurement cost in the sampling process, 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

- Proposed a common framework which fits in several state-of-the-art ranking methods to refine the ranking of configurations based on their predicted performances.
- Conducted a large experimental evaluation on 36 scenarios of 17 subject systems. The result shows over 30 scenarios can obtain better configuration after our refinement.
- 2nd author, the paper was submitted.

Multi-Objective Configuration Sampling in Configurable Systems

- Proposed a sampling method, which uses multi-objective optimization to minimize the number of samples while finding the best configuration according to Pareto optimization. The research aims to balances the trade-off between the measurement cost and the ranking ability in the performance ranking problem.
- 2nd author, the paper was under review.

Comparative Study on Regression Models in Performance Ranking

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

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 and 2017-2018
- Chinese Undergraduate Computer Design Contest (Region Level, Second Prize) in 2018

SKILLS AND INTERESTS

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