Wei Fu

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EDUCATION

PhD. CS North Carolina State University Aug, 2013 - Present
GPA:3.967/4.0

MS. EE Beijing University of Posts and Telecomm Sep, 2009 - Apr, 2012
Overall GPA: 83/100, Major GPA: 86/100.

BS. EE Nanjing University of Technology Sep, 2005 - Jun, 2009
Overall GPA: 88/100, Major GPA: 90/100, Ranking: 5%.

PROJECTS

Evolutionary Approaches vs. Grid Search Feb, 2016 - Present, 2016
Research Assistant with Dr. Tim Menzies, North Carolina State University, USA

- Grid search is the de facto parameter tuning tool, which is available in many data mining software like Weka, R, and Scikit-learn. Previous results show that grid search takes extremely long time to run and suffers from "curse-of-dimensionality". In this project, we find that evolutionary algorithm like differential evolution does no worse but requires very few evaluations as compared to grid search.

Text Mining for Software Engineering Nov, 2015 - Jan, 2016
Research Assistant with Dr. Tim Menzies, North Carolina State University, USA

- The goal of this project is to investigate how data distribution, term weighting methods and behavior of data mining algorithms would affect the performance of text miners. Using data from StackExchange, we tune parameters in SVM and Naive Bayes, change data distribution by SMOTE and tune different weighting methods. Results show that tuning can improve the performance of learners in SE text mining tasks.

Transfer Learning in Software Engineering May, 2015 - Nov, 2015
Research Assistant with Dr. Tim Menzies, North Carolina State University, USA

- This project proposes to use data from different software projects or even different companies to build a learning model by transfer learning methods, potential defects in the new software modules or projects will be predicted using the learner trained by features collected from the code repositories. Further, instead of using all available data to train learners, we find small sampling data is good enough to perform transfer learning.

Parameter Tuning for Defect Prediction Sep, 2014 - Aug, 2015
Research Assistant with Dr. Tim Menzies, North Carolina State University, USA

- One of the "black arts" of data mining is setting the tuning parameters that control the miner. By using searching algorithms like differential evolution, we offer a simple, automatic, and very effective method for finding those tunings. In our experiment, when learning software defect predictors, this method can quickly find tunings that alter detection F-Measure from 12% to 78%.

SKILLS & COURSES

Languages Python, C++, Java, ASP.NET, JavaScript, HTML, R, Matlab, SQL, Shell, LaTeX
Tools ScikitLearn, Weka, Ajax, Bootstrap, Grunt, Git, Google Maps API
Platforms Mac OS X, Linux, Microsoft Windows
Courses Computer Networks, Internet Protocol, Algorithm, Operating System, Statistics, Software Engineering, Search-based Software Engineering, Database System, Software Engineering as human activity, Spacial and Temporal Data Mining

PUBLICATION

- W. Fu, T. Menzies, X. Shen, "Tuning for Software Analytics: is it Really Necessary?", *Elsevier Information and Software Technology*, submitted.
- JC. Nam, W. Fu, S. Kim, T. Menzies, L. Tan "Heterogeneous Defect Prediction", Transactions on software engineering, IEEE, submitted.
- W. Fu, R. C. Yao, F. Gao, J.C.F. Li, and M. Lei,"Robust Null-Space Based Interference Avoiding Scheme for D2D Communication Underlaying Cellular Networks," *IEEE WCNC*, Shanghai, China, Apr. 2013.