Wei Fu

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EDUCATION

PhD. CS North Carolina State University May, 2013 - Dec, 2017(expected)
GPA:3.967/4.0

MS. EE Beijing University of Posts and Telecommunications 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%.

EXPERIENCE

ABB USCRC, Software Engineering Group May, 2016 - Aug, 2016
Research Intern, Raleigh, USA

- Cleaned and visualized historical software development data across all teams in ABB.
- Applied data mining techniques to build predictive models and help improve software development within ABB.
- Explored software engineering research questions based on proprietary data.

China Unicom Design Institute co., LTD Mar, 2011 - Oct, 2011
Intern, Beijing, China

- Standards Research on Relay technique in LTE-Advanced System.
- Conducted independent research into the relay technology of a network physical layer, principally on the performance analysis of a relay network combined with network coding.

PROJECTS

Search-based Software Engineering Research Funded by NSF Feb, 2014 - Present
Research Assistant Under Dr. Tim Menzies, North Carolina State University, USA

- Studied why evolutionary approach is better than grid search for parameter tuning in software analytics[1].
- Investigated the impacts of parameter tuning for software analytics, like defect predictors, our proposed differential-evolution based method can quickly find tunings for defect predictors that improve F-Measure from 12% to 78%[3].
- Researched transfer defect prediction and how sampling techniques affect transfer learning methods[4].
- Studied whether deep learning is applicable to software analytics and limitations.

Build a Continuous Delivery Pipeline from Scratch Sep, 2016 - Nov, 2016
Course Project, North Carolina State University, USA

- **BUILD**: a component that automatically created a build server, which is capable of building a target project in response to commit events, and trigger a post-build task; track and display a history of past builds via http.
- **TEST**: a component that can generate test cases, run unit tests, fuzzing tests, advanced fuzzing tests with genetic algorithms.
- **ANALYSIS**: a component that run existing static analysis tools, like Jlint, to measure coverage and do code analysis.
- **DEPLOY**: a component that has the ability to configure production environment automatically, deploy the application, monitor the deployed application, auto-scale components of production, perform canary release.

SKILLS

- **Software Development**: Python, Java, ASP.NET, JavaScript, SQL
- **DevOps**: Ansible, Jenkins, Git, Docker, Vagrant, Redis
- **Data Science**: ScikitLearn, Keras, Weka, Matlab, R

PUBLICATION

[1] W. Fu, V. Nair, and T. Menzies. "Why is Differential Evolution Better than Grid Search for Tuning Defect Predictors?." arXiv preprint arXiv:1609.02613 (2016).

[2] A. Agrawal, W. Fu, and T. Menzies. "What is wrong with topic modeling?(and how to fix it using search-based se)." arXiv preprint arXiv:1608.08176 (2016) (submitted to ICSE 2017).

[3] R. Krishna, T. Menzies, and W. Fu. "Too much automation? the bellwether effect and its implications for transfer learning." *ASE*. ACM, 2016.

[4] W. Fu, T. Menzies, X. Shen, "Tuning for Software Analytics: is it Really Necessary?", *Information and Software Technology*, 76 (2016): 135-146.

[5] JC. Nam, W. Fu, S. Kim, T. Menzies, L. Tan "Heterogeneous Defect Prediction", Transactions on software engineering, IEEE, 2015 (2nd round review).

[6] 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.