

DEPARTMENT OF COMPUTER SCIENCE
University of Houston

FACULTY CANDIDATE SEMINAR 2012

WHEN: MONDAY, FEBRUARY 6, 2012

WHERE: PGH 232

TIME: 11:00 AM

SPEAKER: Dr. Mark Grechanik, Accenture Technology Labs

Host: Dr. Barbara M. Chapman

TITLE: Software Engineering in the Age of Data Privacy

ABSTRACT:

Creating and maintaining software is beset by many challenges, which include protecting sensitive information. Not only do recent data protection laws and regulations around the world prohibit organizations from disclosing confidential data, but they also impose stiff consequences for these organizations should they accidentally release sensitive information in software artifacts which include database-centric applications (DCAs). DCAs are common in enterprise computing, and they use nontrivial databases. Testing of DCAs is increasingly outsourced to test centers in order to achieve lower cost and higher quality. When proprietary DCAs are released, their databases should also be made available to test engineers. However, different data privacy laws prevent organizations from sharing this data with test centers because databases contain sensitive information. Currently, testing is performed with synthetic data, which often leads to worse test coverage (such as code coverage) and fewer uncovered faults, thereby reducing the quality of DCAs and obliterating benefits of test outsourcing.

More importantly, blindly removing sensitive information from different software artifacts, besides databases may severely reduce the utility of many software engineering approaches, including program comprehension, thereby thwarting different software maintenance and evolution tasks. Finding a solution that balances the goals of privacy and utility, for example, program comprehension in the context of software maintenance tasks is one of the modern challenges of global software development theory and practice. In his talk, Dr. Grechanik will describe novel approaches that allow stakeholders to balance data privacy and the utility of different software engineering tasks. This research is supported by NSF Grant CCF-1017633 and different industry collaborators including Accenture.

BIO:

Dr. Mark Grechanik is a Research Manager with the Accenture Technology Labs and an Adjunct Professor at the departments of Computer Science of the University of Illinois at Chicago (UIC) and the Northwestern University. He earned his Ph.D. in Computer Science from the department of Computer Sciences of the University of Texas at Austin. In parallel with his academic activities, Mark worked as a software consultant for startups and Fortune 500 companies. Mark is a recipient of best paper awards from competitive conferences and he is a PI of NSF grants, which he received through his affiliation with UIC. Currently, Mark is a member of the Executive Committee of ACM SigSoft and he has chaired various research conference tracks and workshops.