Toward Practical Automation for Software Engineering

Monday, 1/27/20 | 11-12pm | West Hall, W105

Speaker: Dr. Kevin Moran,
Research Assistant Professor William & Mary, VA

Abstract:

Given the ubiquity of software in modern society and its applications in increasingly complex problem domains, today’s developers require practical automation in order to effectively and efficiently build, test, and maintain software systems. At the same time, the proliferation of software has led to the creation of an unprecedented amount of freely available data that describes a diverse array of software systems. Artifacts such as source code files, screenshots, videos and bug reports provide a wealth of information from which patterns can be learned to enable useful automation for developers. In this talk, I will describe two of my recent research projects that use machine learning techniques to harness this data contained within software repositories to automate different components of the development lifecycle for mobile applications. My focus on mobile apps stems from the potential impact given the popularity of mobile platforms among both developers and users coupled with development challenges that are unique to the mobile domain (such as change-prone APIs and platform fragmentation). These projects aim to improve developer productivity while alleviating the effects of these challenges.

Biography:

Dr. Kevin Moran is a Research Assistant Professor in the Department of Computer Science at William & Mary. He graduated with his B.A. in Physics and a Computer Science Minor from the College of the Holy Cross in 2013. He graduated with his M.S. in Computer Science from William & Mary in 2015, and his Ph.D. in Computer Science from William & Mary in 2018, advised by Dr. Denys Poshyvanyk. His main research interests include software engineering, maintenance, and evolution with a focus on mobile platforms. He has published at several top software engineering and computer security venues including ICSE, FSE, ASE, ICSME, IEEE TSE, UESNIX Security, and CODASPY. Dr. Moran’s work has recently earned an ACM SigSoft Distinguished paper award at FSE’19 and the best paper award at CODASPY’19.