Supporting Opportunistic Programmers with Better Visualizations

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Abstract

The majority of people who write computer programs today are not professionally trained software engineers working on large codebases. They are scientists, analysts, designers, and other knowledge workers for whom programming is a tool in support of their primary work. We call this group of software developers opportunistic programmers. In this talk, I will present findings from our empirical work with this community that characterize their work practices and information needs. I will focus primarily on two tasks central to their workflow: just-in-time learning of new technologies and approaches, and code understanding to inform modification and reuse. I will detail systems that both I and others have built that endeavor to better support these workflows, and will conclude with a series of open problems that I believe the software visualization community could help solve.

Biography

Joel Brandt is a human-computer interaction researcher and Director of Research Engineering in the Creative Technologies Lab CTL at Adobe Research. Through a mix of empirical work and systems building, he studies how to build tools that support creative work. Recently, much of his research has focused on how to provide better tool support to software developers. The tools resulting from his research are used by millions of Adobe’s customers. Examples include the Blueprint code search engine, the live development, autocomplete, and extensibility features of Brackets, and the Generator extensibility layer for Photoshop. Joel completed his Ph.D. in the HCI Group at Stanford University in 2010, advised by Scott Klemmer. He completed his B.S. and M.S. at Washington University in St. Louis in 2005.