

A Field Study on Fostering Structural Navigation with Prodet

Speaker: Dr. David Shepherd, *ABB Corporate Research*

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Abstract:

Past studies show that developers who navigate code in a structural manner complete tasks faster and more correctly than those whose behavior is more opportunistic. The goal of this work is to move professional developers towards more effective program comprehension and maintenance habits by providing an approach that fosters structural navigation of the code. To this end, we created a Visual Studio plugin called Prodet that integrates an always-on visualization of the most contextually relevant portions of the call graph. We evaluated the effectiveness of this tool by deploying it in a six week field study with professional software developers. The results of the study show a statistically significant increase in developers' use of structural navigation after installing Prodet. Furthermore, the results show that developers continuously used the navigable call graph over the three week period in which it was deployed in production. These results indicate the maturity and value of our approach to increase developers' effectiveness in a practical and professional environment.

Biography:

Dr. David C. Shepherd is a Senior Principal Scientist with ABB Corporate Research where he leads a group focused on improving developer productivity and increasing software quality. His background, including becoming employee number nine at a successful software tools spinoff and working extensively on popular open source projects has focused his research on bridging the gap between academic ideas and viable industrial tools. His main research interests to date have centered on software tools that improve developers search and navigation behavior.