

<b>Discipline /Field</b>  Software Quality Assurance, Risk Analysis, Data Analytics	<b>Project number</b>  <b>PIC09</b>
<b>Project title</b>  Maxwell Metrics-based bug prediction model	
<b>Project description</b>  <p>Maxwell is a large legacy software platform that is used as a real-time acquisition system in hundreds of Schlumberger field locations throughout the world.</p> <p>The different environments, applications, and users of Maxwell software in the field leads to an infinite possibility of combinations to be tested. Due to this, regression testing scope determination must be done using a risk-based strategy, considering the changes to the code.</p> <p>Currently Maxwell collects several metrics for code quality which are used qualitatively to determine a risky code change. The metrics include, among others: code churn, file complexity, bug density, test coverage, etc. In order to improve the predictability of a leaked defect and to improve our test scope determination, we need to improve our analysis of the code changes to more accurately identify risk.</p> <p>This project consists of taking advantage of the Maxwell software code metrics to <b>determine the risk of a code change</b>. <u>Data collection and analysis (analytics) based on previous leaked defects will need to be done.</u> An ideal output is a quantitative model to be used for <b>test scope determination</b>, including a variable importance plot for the various Maxwell code metrics.</p>	
<b>Project Coach</b>  Name: Kyle Bray Title: Maxwell Quality Assurance Manager Position: Email: <a href="mailto:kbray@slb.com">kbray@slb.com</a> Tel: +86 10 6061 5387	<b>Scientific Referent</b>  Name: YIN Chuantao Title: Dr. Associate Professor Position: Email: <a href="mailto:chuantao.yin@buaa.edu.cn">chuantao.yin@buaa.edu.cn</a> Tel:
<b>Company</b>  Name (English): Schlumberger Name (Chinese, if possible): 斯伦贝谢 Address: Schlumberger Technologies (Beijing) Ltd. 9th Floor, Block A, Innovation Plaza, Tsinghua Science Park Beijing 100084, People's Republic of China Website: <a href="http://www.slb.com/about/rd/technology/bgc.aspx">http://www.slb.com/about/rd/technology/bgc.aspx</a>	<b>Company LOGO</b>  