Automated Checking of Web Application Invocations

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Abstract: HTTP based invocations allow web application components to communicate among themselves and build dynamic customized web pages. Invocations are widely used by web applications, but have been found to be a common source of errors. Existing techniques are only able to verify limited properties of web application invocations and omit key correctness properties, such that an argument's type and value must match its target parameter's domain. This paper presents the first approach for verifying these correctness properties of web application invocations. An empirical evaluation of the technique shows that it is able to identify, with high precision, over twice the number of previously known invocation related errors in the subject web applications and that the approach has a low analysis runtime cost.