

Software Technologies Distinguished Lecture Series 2011
Florida Gulf Coast University
Academic 7 – Auditorium 114
March 31, 2011, 6:00-7:00pm

Software Testing: Techniques I Learned at FGCU and Microsoft

**Scott Marks, Software Development Engineer in Test
Bing, Microsoft Corporation, Redmond, Washington**

Abstract. Software testing has several advantages and challenges. Advantages to software testing include minimizing risks, improving customer satisfaction and reducing the cost of bugs found post release. Testing has many challenges such as: near infinite possible combinations and permutations of configurations and input, software with limited testability, inadequate test resources, no definitive end goals (when is a piece of software considered completely tested?) and misleading metrics.

There are numerous types of testing techniques that can be used to target specific areas of the software under test. Common test types are unit, functional, integration, stress, load, performance, configuration, model-based, testing in production and system-level analysis. Understanding when, how and in what combination to use these different testing techniques is difficult to determine, which depend on multiple factors including the list of challenges associated with software testing.

The testing strategies and techniques I used while pursuing a Computer Science degree at Florida Gulf Coast University had considerable differences from those used at Microsoft. Testing at FGCU can be categorized as an informal, limited use of manual and scenario-based testing with targeted scenarios that assignments are graded against with little advanced testing techniques. On the other hand, testing at Microsoft can be summarized as a formal and tactical use of testing practices and test automation.

Speaker's Bio. I graduated Magna Cum Laude from Florida Gulf Coast University in spring 2009 with a BS in Computer Science and a minor in Software Engineering. Throughout my major, I worked on a project utilizing the HYDRA game console. The final iteration of this project was to make it host a multiplayer online game that could be developed remotely with all interaction being done through a browser. This project required multiple programs written in multiple programming languages to communicate harmoniously in real time to produce a seamless gaming experience for the end user.

Prior to and while attending FGCU, I worked in astronomy-related fields including four years at a telescope retailer, five years assisting astronomy labs at FGCU and Edison State College and four years conducting asteroid research at FGCU's Evelyn L. Egan Observatory. My research contributed to six peer-reviewed publications, five posters and an appearance at an American Astronomical Society Division for Planetary Sciences conference.

I was hired by Microsoft as a Software Development Engineer in Test during my final year at FGCU and started in the summer of 2009 following my graduation. I test the Execution Engine of Bing's Cosmos system, which is a massively distributed system used to store and process large amounts of data for Bing and other teams throughout Microsoft. Currently, I am facilitating a project that will automatically transfer production data and jobs to the Cosmos test environments for testing purposes.