MS Computer Science students build a digital forensic tool

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The SEAKER project was a fantastic learning experience for students, as its design and prototyping combine many different skills: C programming language; BASH shell scripting; Linux Operating Systems and command line; Raspberry Pi hardware; Gliffy diagrams; Dropbox Paper (used as a Wiki); Slack collaborative discussion/brainstorming tool; GitHub software repository (used as a collaborative tool in the design of the software that animated the Raspberry Pi); WordPress blogging; AWS S3, which served as a repository of the final product; Grep (regular expressions and pattern matching); working with different file systems; and, of course, strict performance (speed, read only). All of this had to be combined by a group of 18 students with different backgrounds and skill sets to produce something that could be used by DF examiners.

According to Ryan McIntyre, an MS Computer science student, participating in the SEAKER project was "an invaluable experience, which provided lessons reaching far beyond the technical aspects of computer science." The experience of working with a larger group "provided insights into how teams in industry function, which simply cannot be gained from individual and small group projects . . . I felt first-hand how immeasurably valuable it is to learn from the experience of one's teammates . . . and recognized by own potential to lead my peers."

One of the CSUCI pillars is Community Engagement and Service Learning. This approach identifies needs in the community, and builds a curriculum around research and development to address those needs. The SEAKER project is an excellent example of such a symbiotic relation between CI and the community. It is also an example of the strength of a pedagogical approach that combines both theory and practice. Without theory a field becomes a collection of ad hoc procedures, but without practice theory becomes an abstract exercise in intellectual virtuosity.

MS Computer Science student McIntyre could not agree more: "The SEAKER project bridged the gap between education and application. It turns out that it's not that far after all. That gap is intimidating as a student; many of us don't feel prepared for the 'real world' by our education. . . My experience in the SEAKER project helped me realize that I am already prepared to contribute to real, functional projects, and, moreover, that I find great happiness in contributing to something larger than myself."

The Computer Science program plans to build on the approach that combines the Service Learning and Theory and Practice paradigms as we go forward with our Computer Science program in Security Systems Engineering and our Masters level offering in Cybersecurity.

The MS Computer Science degree is offered through CSUCI Extended University. Visit our website to learn more about the program.