

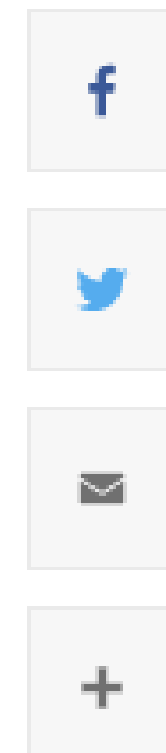
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## New testing paradigms offer better code with fewer bugs

By [Patricia Waldron](#)

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In the 2000s, [Owolabi Legunsen](#), assistant professor of computer science, was a software engineer at a Nigerian company, primarily writing code for a finance company. Nigeria is now home to a booming tech sector with million-dollar startups, but at the time, most people working with computers did sales or IT. Legunsen knew he was lucky to have a software engineering job, but at the same time, “I was often writing bugs that sometimes contained software,” he said. “I always thought to myself, there’s no way Google, Microsoft, or Facebook would do software engineering like this.”

To improve, Legunsen enrolled in a computer science graduate program at the University of Texas at Dallas, where he got his first taste of research. He realized, “this is it. I want to be there at the forefront, creating new knowledge for better software engineering.” He went on to earn a Ph.D. at the University of Illinois at Urbana-Champaign and joined the computer science faculty at the Cornell Ann S. Bowers College of Computing and Information Science in 2020.

Now, Legunsen’s work touches on different aspects of software engineering, but his main focus is on developing new methods for testing and validating code.

In the last two years, Legunsen and his collaborators have published two innovative ways to test software that fill major holes in the arsenal of existing methods.

“What we’re doing is identifying gaps in how people can test software today and the kinds of bugs that escape that testing process,” Legunsen said. “When we find those gaps, we invent new types of tests that can help us find bugs earlier and reduce these huge costs.”

Read the full story on the [Cornell Bowers CIS website](#).

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