

Information systems researchers determine successful software programming aids

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Professor Radha Mahapatra and Associate Professor Sridhar Nerur, both in the Information Systems and Operations Management Department of the College of Business, recently published "Distributed Cognition in Software Design: An Experimental Investigation of the Role of Design Patterns and Collaboration" in the prestigious *MIS Quarterly*. Credit: UT Arlington

The success of having software programmers work in pairs greatly depends on the ability level of those individual programmers, two UT



Arlington College of Business professors have written in a recently released paper.

The paper also concluded that using design patterns can greatly improve the quality of software programs and the productivity of programmers.

Professor Radha Mahapatra and Associate Professor Sridhar Nerur, both in the Information Systems and Operations Management Department of the College of Business, recently published "Distributed Cognition in Software Design: An Experimental Investigation of the Role of Design Patterns and Collaboration" in the prestigious *MIS Quarterly*.

MIS Quarterly is the premier academic journal in the <u>information</u> <u>systems</u> discipline.

Rachel Croson, UT Arlington College of Business dean, said that *MIS Quarterly* is an elite publication, which speaks to the quality and importance of this work.

"This research draws from insights and techniques in organizational behavior and applies them to programming," Croson said. "Their results suggest how firms could greatly speed up software programming without sacrificing quality."

In recent times, paired development has gained considerable traction among software developers. However, Mahapatra and Nerur conclusions on using paired development were mixed.

"We concluded that programmers working in pairs helps the software design process many times," Mahapatra said. "However, for the very top echelon of programmers, working alone yields the best results."

Mahapatra and Nerur co-authored the paper with George Mangalaraj, a



UT Arlington doctoral graduate and currently an associate professor of Information Systems at Western Illinois University, and Ken Price, a professor emeritus in the UT Arlington College of Business Management Department.

The other major conclusion of the paper was that relying on the use of design patterns improves positive outcomes in software design. Design patterns help software developers create superior quality software at less time.

"Software design is a very labor and knowledge intensive endeavor. About two out of three new <u>software</u> projects are deemed unsuccessful, according to an industry report," Nerur said. "What we've demonstrated through a controlled experiment is that relying on design patterns can help programmers be more successful."

The researchers said many <u>software design</u> companies are constantly seeking ways to improve productivity and quality. They said companies who can save a small percentage of time and personnel expense in avoiding bad code early in the process could yield big results down the road.

Provided by University of Texas at Arlington

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