

## Academic Keynoter Pairs Artificial Intelligence and Economics

Surveying how artificial intelligence and economics interface, [Dr. Michael P. Wellman](#), the academic keynoter at the [Workshop on Information Technology and System \(WITS\)](#), said one AI goal is “to design and build computational decisions makers that approximate ideally rational agents.”

A professor of computer science and engineering at the University of Michigan, Wellman is also the past executive editor — and still on the advisory board of — the [Journal of Artificial Intelligence Research](#). He also a Fellow of the [Association for the Advancement of Artificial Intelligence](#) and the [Association for Computing Machinery](#).



**Michael P. Wellman**

Recapping some of the ideas he and co-author Dr. David C. Parkes of Harvard University explored in “[Economic Reasoning and Artificial Intelligence](#),” an article published in *Science* (Vol. 349, Issue 6245, pages 267-272) last July, Wellman explained that in AI, an ideally rational agent is known as a *homo economicus*, and in economics, the machine version of this is the *machina economicus*. While the comparison offers a “very straightforward way of thinking about this problem,” Wellman said, “it’s not necessarily straightforward to do this.”

Determining how to build such *machinas* that are computationally effective yields many research problems, he said.

“Ultimately, we are going to be bounded in this rationality,” he said. But “is bounded rationality different for humans and machines?” he asked.

He pointed out areas where AIs already behave differently; for instance: “Computers are good at calculations....They certainly beat humans in response time, and they have a lot of stamina.”

“On the other hand, there are times when computer cannot achieve the common sense that humans do,” Wellman said, citing a case in 2011 [of the price an out-of-print animal genetics textbook rising to \\$23.7 million](#) because of a pricing algorithm run amok.

Despite such glitches, the use of algorithms has become increasingly embedded as tools in financial markets. “In fact,” Wellman said, “over the last 10 or 15 years, algorithmic traders have taken over at least equity trading and made inroads on foreign exchange and fixed income and other domains as well.”

“As AIs become more real,” he said, “you have to realize that they are not only going to exert force on the economy; they themselves are [going to be] subject to economic forces.”