Prof Says Tech Entering the Age of the Algorithm

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Software professionals may soon have a whole new category of colleagues: algorithm developers.

That's the conclusion of a UT Dallas researcher who speculates that as algorithms increasingly become the differentiator in software, algorithm developer jobs and algorithm engineering degrees may not be far behind.

Netflix paid $1 million two years ago for an algorithm – one of the basic building blocks of software programs – that would more accurately predict which films a customer would like. And with a California physicians network now staging a $3 million contest for a healthcare-related algorithm, "We may be witnessing the emergence of a new historic trend," said Dr. András Faragó, a computer science professor in the Erik Jonsson School of Engineering and Computer Science.

The rise in the importance of algorithms, he added, parallels the earlier ascendance of software itself, which once played a secondary role to the original star, hardware.

"While no one questions the value of software today, the underlying intellectual content, the algorithms, are still viewed by many as something without hard value," he said. "The value is still typically assigned to the implementation, not the algorithm. In a sense, algorithms up until very recently have had the same relationship to software implementation as software previously had to hardware: icing on the cake."

That's understandable, he said, when you consider that the implementation phase is where the most energy is expended in highly visible software products.

"On the other hand, there are more and more situations, as signified by the Heritage Provider Network's $3 million prize, where the really hard part is finding the right algorithm," Faragó said. "Once it is found, the implementation can be done by any skilled team, and I believe this may show the emergence of a trend in which the industry starts recognizing the real, hard value of sophisticated algorithms."

Announced in March, the two-year Heritage contest has already attracted more than 600 participants vying for the prize. They're working to design the algorithm that best predicts which people are more likely to require hospitalization in the future. The ultimate goal is to provide at-risk people with preventative health that will prevent the need for hospitalization.

Faragó's research interests include communication networks and their protocols, network design and analysis, and algorithms. Among the courses he teaches are Advanced Data Structures and Algorithms, and the Algorithmic Aspects of Telecommunication Networks.

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