

Birmingham Engineering Student Wins \$25,000 Wolfram Turing Machine Prize

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Alex Smith, an engineering student from the University of Birmingham, has won the US \$25,000 Wolfram 2,3 Turing Machine Research Prize.

In May 2007, the Wolfram 2,3 Turing Machine Research Prize was established to be awarded to the first person or group to prove either that Wolfram's Turing machine is universal, or that it is not.

Alex Smith was able to demonstrate - with a 50 page proof - that Wolfram's Turing machine is, in fact, universal.

This result ends a half-century quest to find the simplest universal Turing machine. It demonstrates that a remarkably simple system can perform any computation that can be done by any computer.

"I had no idea how long it would take for the prize to be won", said Stephen Wolfram. "It could have taken a year, a decade, or a century. I'm thrilled it was so quick. It's an impressive piece of work."

The immediate implications of the result are primarily scientific, but potential future implications include the possibility of using Wolfram's 2,3 Turing machine to construct a computer operating at a molecular scale.

"I saw the prize problem primarily as a puzzle", said Alex Smith. "At first, I didn't think the Turing machine would be universal. But then I found a way to show that it is."

Alex is an undergraduate studying Electronic and Computer Engineering at the University of Birmingham. He grew up in Birmingham, and was an alternate for the UK International Mathematical Olympiad team. His proof will be published in journal Complex Systems.

An official prize ceremony will be held at the Bletchley Park site of Alan Turing's wartime work.

Ends

Notes to Editors

For additional information see www.wolfram.com/news/researchprize.html

The prize is part of Wolfram Research's ongoing commitment to the support of scientific research and education.

<http://www.wolframprize.org>

For further information

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