

Ageing in artificial and real life: can we code a cure?

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Keynote Abstract

We often think of ageing as a natural, inevitable process. However, viewed biologically, ageing is the world's leading cause of death and suffering. That's because it's the main cause of the world's biggest killers, like cancer, heart disease and dementia. The good news is that we can rise to the challenge with science: diets, drugs and genetic changes are just some of dozens of ways we have to slow and even reverse the ageing process in the lab, and some ideas—like the removal of aged 'senescent' cells—are already making their way into human trials. Computational science will be essential to fulfil the incredible promise of this field: from data analysis, to machine learning, to systems biology, to artificial life. And a deeper, data-driven understanding of the ageing process could lead to the greatest revolution in the history of medicine—one that has the potential to improve billions of lives, save trillions of dollars, and transform the human condition.

Andrew Steele is a computational biologist and author of a book "Ageless: The new science of getting older without getting old". After a PhD in physics from the University of Oxford, Andrew decided that ageing was the single most important scientific challenge of our time, and switched fields to computational biology. After five years using machine learning to investigate DNA and NHS medical records, he is now a full-time writer, presenter and campaigner.

