

Human and Machine Intelligence

In his 1950 Mind paper, Alan Turing reframed the question of whether machines could think as an operational or behavioral question: Could a computer be built that was indistinguishable from people in playing the “imitation game,” now known as “the Turing Test”? He conjectured that by the end of the 20th century “one [would] be able to speak of machines thinking without expecting to be contradicted” and that computers would succeed in the Turing Test. Turing's first conjecture proved right. Although his second has not yet been realized, research in Artificial Intelligence (AI) has generated a variety of algorithms and techniques regularly deployed in systems enabling them to behave in ways that are broadly considered to be intelligent. The performances of Watson, Siri, and driverless cars are but a few examples in the public eye. This session's panelists will highlight some of the major accomplishments of research in AI and its influential role in the development of computer science and computer systems more broadly, considering not only progress in individual subfields, but also designs for integrating these into well-functioning systems. They will also consider the ways in which AI theories and methods have influenced research on human cognition in behavioral sciences and neuroscience as well as scientific research more generally, and they will discuss major challenges and opportunities for the decades ahead.