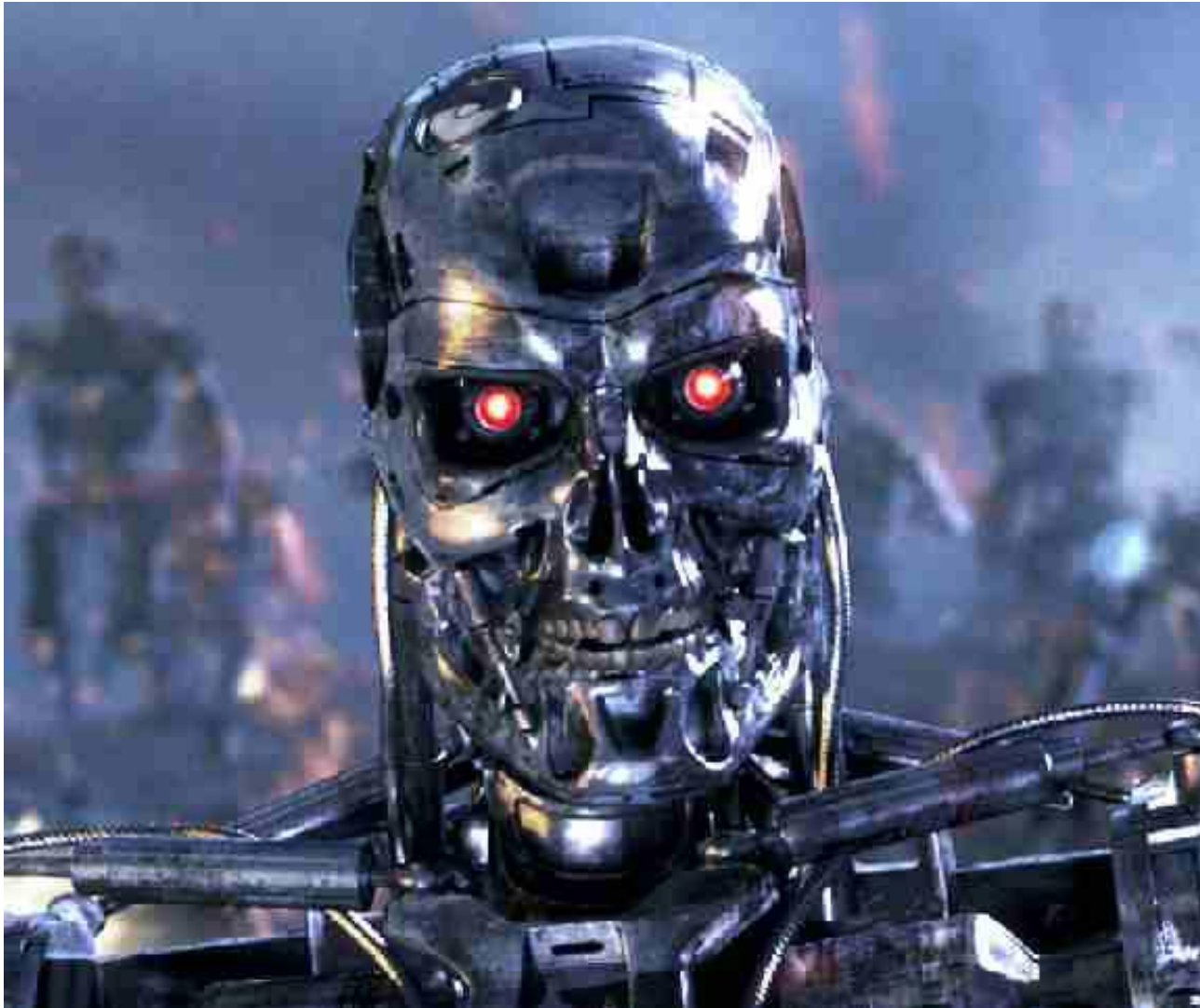


Does the Future Need Us?

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Fear of “Thinking Machines”



Concerned Technologists

- ◆ **Bill Joy, Cofounder of Sun Microsystems, April 2000: "Why the Future Does Not Need Us"**
- ◆ **Jaron Lanier, inventor of virtual reality, August 2011: "Let's suppose that machines get good enough that one can say a lot of people are extraneous"**
- ◆ **Slate Magazine, Sept. 2011: Will Robots Steal Your Job?**

AI: Early Optimism

- ◆ 1958, H. A. Simon and A. Newell: "within ten years a digital computer will be the world's chess champion"
- ◆ 1967, M. Minsky: "Within a generation ... the problem of creating 'artificial intelligence' will substantially be solved."

“AI Winters”

- ◆ The first AI winter 1974–1980: slow progress and dearth of funding
- ◆ The second AI winter 1987–1993: the “Fifth-Generation bust” and dearth of funding

AI Breakthroughs

- ◆ 1997: IBM's Deep Blue beats Kasparov.
- ◆ 2005: Stanford autonomous vehicle drives 131 miles along an unrehearsed desert trail.
- ◆ 2007: CMU autonomous vehicle drives 55 miles in an urban environment while adhering to traffic hazards and traffic laws.
- ◆ 2011: IBM's Watson defeats the two greatest Jeopardy! champions, Brad Rutter and Ken Jennings, by a significant margin.

Impact on Jobs

- ◆ 2012, E. Brynjolfsson and A. McAfee, *Race Against The Machine: How the Digital Revolution is Accelerating Innovation, Driving Productivity, and Irreversibly Transforming Employment and the Economy:*

"technological progress is accelerating innovation even as it leaves many types of workers behind"

My Big Question

- ◆ A.M. Turing, 1948: "Intelligent Machinery"
- ◆ H.A. Simon, 1956: *"machines will be capable .. of doing any work a man can do"*
- ◆ T. Kaczynski, 1995: *"Let us postulate that the computer scientists succeed in developing intelligent machines that can do all things better than human beings can do them."*
- ◆ M.Y. Vardi, 2012: *There is no reason to believe that they are not right! If machines can do any work humans can do, what will we do? Does the future need us?*

A Cheap Response

- ◆ *Cheap Response: "You are a Luddite"*
 - *Luddism*: distrust or fear of the inevitable changes brought about by new technology
- ◆ *I am asking for a thoughtful response!*
 - *What is the future of humanity in a world where machines can do everything that people can do?*