



Dave Ferrucci, Computer Scientist Seeing the Future

Lesson Introduction

Interview Log: Interviewed on April 25, 2024 by Kevin Money

- Access **The Thread** episode of Dave Ferrucci on our [YouTube channel](#) or at [LifeStories.org](#) and download the transcript [here](#)
- Access his long-form interview on [LifeStories.org](#)

Learning Objectives

Social Studies Focus

- Explore the changes in generational expectations over the past century
- Define large language models and AI
- Examine the evolution of AI in education and society
- Analyze the impact of technology on individual lives, the workplace, and society as a whole

English Language Arts Focus

- Examine perspective taking from the point of view of one computer scientist
- Analyze the structure and purpose of a narrative, identify key themes in the episode, and synthesize information from a spoken text
- Analyze, reflect on, and discuss the title “Seeing the Future” after watching the episode
- Explore the idea of purposeful work and a meaningful life
- Use Dave Ferrucci’s episode as inspiration for a creative writing assignment

Episode Overview

Dave Ferrucci takes us on the intensely personal journey that led him to become one of the world’s leading architects of artificial intelligence. Ferrucci famously led the IBM Watson team that designed the first computer system to win on *Jeopardy!*. Now his mission is to design artificial intelligence systems that combine the ChatGPT large language models (LLM) with reasoning engines that offer greater protection from the potential dangers of AI. In this episode of *The Thread*, we are in conversation with a true visionary whose unique gift is his ability to put technology in human terms that help us see the future with hope and excitement.



Biography

Dave Ferrucci is an award-winning artificial intelligence pioneer best known for leading the team behind IBM’s “Watson,” which made history in 2011 by defeating *Jeopardy!*’s greatest champions. After earning his B.S. in biology from Manhattan College and a Ph.D. in computer science from Rensselaer Polytechnic Institute, Ferrucci joined IBM’s T.J. Watson Research Center, where he spent nearly two decades advancing AI. In 2013, he transitioned to Bridgewater Associates and later founded Elemental Cognition in 2015. As Founder, CEO, and Chief Scientist, Ferrucci is pushing AI beyond machine learning, creating systems that are powerful, trusted, and understood by people. With over 50 patents and numerous papers in AI, Automated Reasoning, and Natural Language Processing, Ferrucci’s work has significantly shaped the field. His contributions earned him the title of IBM Fellow, along with prestigious awards like the Chicago Mercantile Exchange’s Innovation Award and the AAAI Feigenbaum Prize.



Teaching Tip: First Take

A **First Take** is a warm-up writing or conversation exercise created uniquely for *The Thread* that strengthens media literacy skills. Like an opening song in a musical, the first stanza of a poem, or even the first impression one person makes on another, the First Take asks students to reflect and share their initial thoughts and feelings about the episode's opening.

Suggested Steps

▣ **Watch and then read aloud** the opening of Dave Ferrucci's episode with students:

"You think about data driven techniques, you think about language and you think about logic and inference. How do we build AI systems that combine these things? Because we love the incredible language abilities of large language models, but we need precise, reliable, accurate problem solving to solve tough enterprise problems. How do we do that? And we have an answer to that. So I think Elemental Cognition's vision for how to architect AI systems ended up being right with a vengeance, as you see now what's happening in the AI space."



▣ **Ask and Discuss:** What do you learn about Dave Ferrucci as a computer scientist and entrepreneur from the opening of his episode? What insights can you infer?

▣ **Next,** as a class, discuss the role of "the opening" in any form of storytelling – an interview, film, play, or song. What is their point of view on why the filmmakers chose this as the opening for the episode? What ideas, topics, or themes may the filmmakers be foreshadowing?

▣ **Last,** have students do a one-minute quick write reflecting on how the opening connects with the episode's title, "Seeing the Future." Then, have students get into pairs and share their thoughts and feelings.



Photos: Watson question answering computing system. (Dave Ferrucci) top; Jeopardy host Alex Trebek contestant Ken Jennings after his earnings from his record breaking streak. (Jeopardy Productions) lower left; Dave with his grandparents. (Dave Ferrucci) lower right



Connections: *The Thread Up Close*

- ▣ What new insights do you learn about AI from Dave Ferrucci?
- ▣ Dave Ferrucci remains moved by his time as an IBM fellow. As he explains, it offered him the freedom to create and pursue his own ideas. What environment allows you to be innovative and creative?
- ▣ Another quality Ferrucci believes was essential for his success was his internal strength to persist. How do you define persistence? What feeds your inner strength?
- ▣ How do you understand the title after watching this episode? What new or surprising insights about innovation, AI, and the future did you learn as a result of Dave Ferrucci's career and point of view?
- ▣ What new insight did you learn about (yourself, your community, your world) from his stories?

Activity: Seeing the Future

Dave Ferrucci saw his future differently than his parents' expectations and pursued a career path that did not yet exist. At times he even had to convince colleagues who were reluctant to be part of his team. "We're researchers," he recalls saying. "Even if we fail, at least we'll learn why we failed." His optimism, intellect, and imagination led to success at IBM with Watson, starting Elemental Cognition, and continuing to work in AI.

Using Dave Ferrucci's story as a source of inspiration and learning, have students write a short story from the perspective of an AI system in the future. The story should explain how AI interacts with the characters, the ethical challenges it faces, and the ways it works to help humanity.



Additional Resources

- ▣ Explore [IBM Watson](#) - official website
- ▣ Learn more about Elemental Cognition - official website
- ▣ Read [Final Jeopardy: The Story of Watson, the Computer That Will Transform Our World](#), Stephen Baker
- ▣ Watch PBS Documentary: [Smartest Machine on Earth](#)

