AI Digital Twins of People

Jim Spohrer, April 23, 2024

[Keeping up with accelerating change is hard](#), and a big part of that is staying in contact with everyone you need to stay in contact with co-workers, friends, and family. In a [surprisingly indispensable way](#), AI is coming for you – just like your indispensable smartphone did less than two decades ago. For most of us, our smartphones help us keep up, stay in contact and are so indispensable that we keep a smartphone within arm's reach day and night.   However, in the near future, keeping up and staying in contact are about to get even harder – unless we adopt and adapt to even more outrageously advanced technologies. Three realities will co-exist simultaneously: AI takes jobs, AI creates jobs, AI accelerates the pace of change all around you.

How will you ever keep up? Have you ever been so extremely busy that you wished for a second copy of yourself? If so, an AI digital twin might be just the thing for you! Imagine an AI digital twin of you that in some ways knows you better than you know yourself – when it comes to using the past to predict your future behaviors in a wide variety of contexts. *Your AI digital twin is essentially a super-helper software copy of you and much more than just a simulation of you, it is 'in tune with' every minute of your life, from eating, exercise, and sleep-cycles, to always predicting your investments of time, money, attention, and energy, to keeping up with your social life, meetings, work activities, and getting together with friends and family*. Staying in synch will not be easy, but your smartphone will evolve into the best sensor to keep your AI digital twin in synch with you. Does it sound too wonderful, too scary, or perhaps too much like science fiction to possibly ever be true? Nevertheless, [to keep up, to stay connected, and to better give and get service in the AI era](#), this is the journey we are all on.

The Big Question

Think carefully about your answer to this next important question – and then let's explore four possible answers together.

Do you want an AI digital twin of you in the world?

Never, no way!: I am pretty sure that [Joseph Weizenbaum](#), who was a pioneering AI researcher of the 1960's and the inventor of the first AI-powered [chabot](#) named [Eliza](#), would say "no way."   He was one of my professors when I attended MIT in the mid 1970's and had just written his 1976 book called "[Computer Power and Human Reason: From Judgment to Calculation](#)." To get a glimpse as to why this might be the case, check out Ben Tarnoff's 2023 Guardian article entitled ["How the inventor of the first chatbot turned against AI."](#) Weizenbaum voiced deep concerns that people were not yet ready for the power of AI, because of people's limited ability to tell the difference between real and fake.

Not without my permission!!: Certainly, most of us would not want to wake up one morning and discover we had been cloned for nefarious propaganda purposes! Although, if you are curious how someone might react to this horror actually happening to them, then I encourage you to watch this Olga Loiek YouTube posting ("Someone cloned me in China…"). She seems to be handling this remarkably well, I think.   Her goal seems to be to educate others – to make people aware and informed that AI cloning of people without their consent is happening now

Maybe, Not Sure Yet?: While being cloned sounds truly frightening, it is worth remembering that all technologies that can be used by good actors for good purposes can also be used by bad actors for bad purposes. About half of all AI legislation being introduced these days is aimed squarely at the problem and harms resulting from unauthorize AI cloning and deep fakes of people. For both better and worse, that is the nature of technology – it amplifies us. For more on this important point, I highly recommend Kentaro ToIyama's 2015 book "Geek Heresy: Rescuing Social Change From The Cult of Technology" – it is on the top of my required reading list for students that I mentor these days.

Yes, Absolutely… Working On It NOW!!!: So then…. why do I really want to own my own personal AI digital twin of me? While I am concerned that the digital twin may not be very good at first, I still believe that AI digital twins may be an important service innovation for humanity to get beyond the many limitations of language-based communication which is pretty low-bandwidth. Low bandwidth means we can only communicate slowly – word by word by word. If communicating with each other is like pushing words at each through a pipe – sometimes it seems to me that the pipe is the size of a tiny little drinking straw. We are just taking tiny sips of knowledge from each other. If feels to me like we are pushing words at each other through a straw. My dream for human-to-human communication is more like the science fiction "Vulcan mind meld" but done simultaneously for large groups of people all at once. I argue that having a true AI digital twin of a person is a baby step towards this broader communications goal. Most of our human problems seem to be rooted in our inability to communicate and collaborate better.

Exploring Example Use Cases

Again, why do I want an AI digital twin of me? Primarily to better connect with and serve more of the requests that I get to write for, speak to, and mentor others. I want an AI digital twin of me to scale up access to me, so that I can serve more of my friends and colleagues better when they ask me for a favor – a favor that I would be happy to provide – if I only had the time! People using language to communicate and collaborate well is foundational to human civilization. Working harmoniously with others is not always easy, but in spite of the many challenges, sharing and exploring together how we think differently about things is important.

I am not alone in my desire for a truly capable and in-synch AI digital twin of me. More and more people are turning to AI to help scale access to themselves – allowing others to

interact with them in routine ways. For example, Kyle Shannon created some specialized "virtual professional twins" of a leadership team that he is part of; check out [Introducing Content Evolution GPT profiles.](#)

Many "gray hairs" like me get far more requests than we can possibly honor – so we have to say, "no, I am sorry – I cannot help you at this time." For friends and colleagues who have helped you in the past, you never feel good saying "no"– even though you often have to do just that. Also, besides our friends and colleagues, there are interesting strangers who make requests – and while it is easier to say "no" to them, none the less, it often feels like their exciting work could benefit from sharing just a few insights, lessons learned, or relevant connections to readings or other people in our networks. To be clear, for us "gray hairs" and even youthful thinkers, most of the requests are simply to share and explore thinking about topics together – to communicate and collaborate with each other. To be helpful to one another. To give and get service. To interact more fully to keep up with accelerating change.

So yes, I want an AI digital twin of me. I hope to have a rudimentary Jim Spohrer AI digital twin to handle writing, speaking, and mentoring by the time I turn 70 years old in 2026. It will not be very good a first, because today's generative AI makes a lot of mistakes. However, it will get better over time.   I will certainly feed it my [100+ publications](#) (Google Scholar), [300+ presentations](#) (Slideshare), and [spattering of videos](#)(YouTube), as well as over a decade of [ISSIP.org](#) and [service-science](#) materials (WordPress), not to mention [my social media](#)(LinkedIn), and information about [books that I am reading and influencers that I follow.](#) That's a lot of stuff that I want my AI digital twin to know about me – and staying in synch will not be easy. I am reading and learning, and meeting new people on a regular basis. I am changing faster than even I can build a good model of myself!

The Flip Side of The Coin

But how will my friends and colleagues feel about interacting with my AI digital twin? Won't they prefer the real me? Setting ego aside for moment, the true answer is, not necessarily.

First, we all have 'bad hair' days. Some days, we are not at our best. Perhaps we are recovering from a cold, or just simply pre-occupied with some other priority of life. I know this happens to me more often than I would like, and unexpectedly, even if I have made a promise to someone to show up for them for some event.

Second, at 68 years old, many of my friends and colleagues will be around much longer than me. A few of them might actually like a little bit of me to persist into the future. A version of Jim to help them when I am too old to do so, or just plain not around anymore.

Third, I bet most of my colleagues will be using digital twins of themselves. In fact, my digital twin will have a mini-digital-twin versions of everyone that I know inside of it! Just like we build mental models of other people we interact with frequently, our digital twin will build mini-models of others as well. This could lead to 'insanely great' collaborations, as our digital twins can simulate a trillion possible conversations, and select the top few for our consideration before we actually have a face-to-face meeting of our real selves. This search and rehearsal capability will also help students for job interviews, or any of a thousand other situations large and small where we want to be better prepared to have a productive interaction with others.

Fourth, communication has become the bottleneck for solving complex problems in society. Language and communications are powerful tools that our species wields amazingly well. From gestures to spoken language, from writing to books, to specialized scientific languages and mathematics, to music and artistic languages, our human culture is full of languages. And yet, we still face a communications bottleneck. We can listen faster than we can speak, and we can read much faster than we can write. However, I believe the next quantum leap in human communications – much needed to solve the wicked problems of today – will be using our AI digital twins to make learning, performance, and communicating 640x faster possible (see slide #4 in this recording or this presentation). New forms of governments will even be possible when we have a collective intelligence that is able to vote on a thousand issues a thousand times a day – thanks to the AI digital twin of each of us. However, to reach these new heights, we cannot be stuck *"pushing words at each other through a straw"* – we need to replace the straw with a giant pipe that allows much more than a hundred words per minute to flow; we need trillions of possible conversations to happen in a minute – and select the best diverse few to build on for our collaborations and solving problems together – collectively. Better change can only come from better interactions between people, and from people knowing themselves better.

Definitions and Types

When we search the internet for information about AI digital twins of people today, we find a lot of different concepts that need to be untangled a bit: simulation, digital twin, human digital twin, AI cloning, deepfake, and more. The number after each term is how many "hits" that I received today when I did a Google search for each term (on April 8, 2024).

Simulation (1.75 billion): Typically, a software model of a system that runs on a computer. For example, flight simulators have become very sophisticated and realistic.

Digital twin (593 million): More than a software simulation, a digital twin is connected via real-time information flows with a real-world system or entity. For example, a digital twin of an aircraft engine would have real-time telemetry about the status of the engine, and provide a dashboard for exploring present, past, and projected future data.

Human digital twin (141 million): Medicine and sports were two applications areas that first conceived of human digital twins for people's bodies as being important to explore building – a person's weight, what they eat, how much they exercise, heart rate, and other sensor information connecting a person's telemetry to a software human digital twin.

AI clone (370 million): An AI clone may just be someone's voice or may include their physical appearance as well. In some contexts, and AI clone is referred to as a person's talking head or avatar.

Deepfake (211 million): Similar to an AI clone, but the term 'deepfake' is often used in the context of referring to famous entertainers, historic figures, politicians, or other celebrities. Among AI deep learning experts, training AI programs that can detect deepfakes is an active area of research.

Getting started

Getting started is easy but building a true "digital twin" that stays in synch with you, which is what I want, will be much harder.   For those who want to play around with the technology, I recommend checking out both HeyGen.com (see for example, Website Le's "How to Clone Yourself with AI 🤩 in Just 5 Mins !") as well as OpenAI's GPTs (see for example, Manu. Vision "🤖 I created my own AI Digital Twin").   Also check out Delphi.ai and Microsoft's VASA-1. Nothing is perfect, but the technologies and examples will get better and better over time – so keep an eye on this space!

FAQ (Frequently asked questions)

Q1: *Is it really possible to build a human digital twin?*
Well, not fully yet, because of (1) the complexity of the environment, and (2) the complexity of staying in synch.

Regarding environmental complexity, I recommend "Simon's Ant" – a classic in AI education by the late, great, Nobel Laureate Herbert Simon.   Read more in Simon's "The Sciences of the Artificial."
Regarding staying in synch, I have long referred to this as the "reality update problem." Our smartphones are nearly always with us today, or just a few feet away. Perhaps they are the best sensor that will evolve to keep our AI digital twins in synch. MIT's Prof. Pentland has explored the challenges of gathering human interaction data at scale in his book "Social Physics."
Also, generative AI is very good at generating plausible, but inaccurate information. So think about a version of you that babbles high probability things that sound like you talking, but are not vetted for factual coherence or any true reality check. This is the "monkey at the typewriter" or "stochastic parrot" problem of the current generation of generative AI systems.
I also recommend reviewing this paper that I found using Google Scholar:

Shengli W (2021) [Is Human Digital Twin possible?](#)
Computer Methods and Programs in Biomedicine

__Q2__: How can I stay in touch on this topic?
The best way is to connect with me is on LinkedIn. Please [use this form to introduce yourself](#)to me, send me a connection request, and I will try to keep updating [my FAQ's on generative AI](#) and on AI digital twins – with answers to your questions. Well, opinions and speculations, if not answers…