ver seven years ago, Soul Machines pioneered research into progressing human-machine collaboration by taking a radically different approach. By combining models of physiology, cognition and emotion with advanced lifelike CGI, we set out to create a new form of biologically inspired AI.

BabyX was our first developmental prototype designed as both a stand-alone research project and as an expandable base to feed into commercial computer agents. She enables us to explore human co-operation with machines and the foundations for creating a digital consciousness.

BabyX was designed for research and 'she' allows Soul Machines to not only explore the models of human behavior but also to create autonomous digital beings.

BabyX provides a foundation from which we learn, experiment and continue to develop the world's first end-to-end solution for dynamically creating, teaching, managing and deploying Digital People.

The inspiration:

What is the essence of animation? What if a character could autonomously animate itself and you could interact with it? How do you bring a digital character to life?.

Problem to solve:

How would we create biologically inspired artificial intelligence? And, build a digital consciousness to create effective computing that interprets and simulates human emotion, engaging autonomously?

The vision:

To create machines that can learn, interpret and interact with the world around them in the way that humans do.

The opportunity:

To make machines and AI as life-like as possible. To build human-like AI that has flexible intelligence and a dynamic interface that can relate to people.

Bringing Together Disciplines to Bridge the Digital and Human World

BabyX is based on and informed by significant research in key fields that have been integrated into a cohesive research and development effort. These include:

- Advanced CGI
- Biologically Inspired Cognitive Architectures
- Neuroscience
- Cognitive Science
- Developmental Psychology

- Cognitive Linguistics
- Affective Computing

Together they enable BabyX to manifest and apply various models of the brain to enable scaled interactions and responses, creating a bridge to the human world.

"The best kind of system is where humans and AI work together … AI is basically an emulation of us."

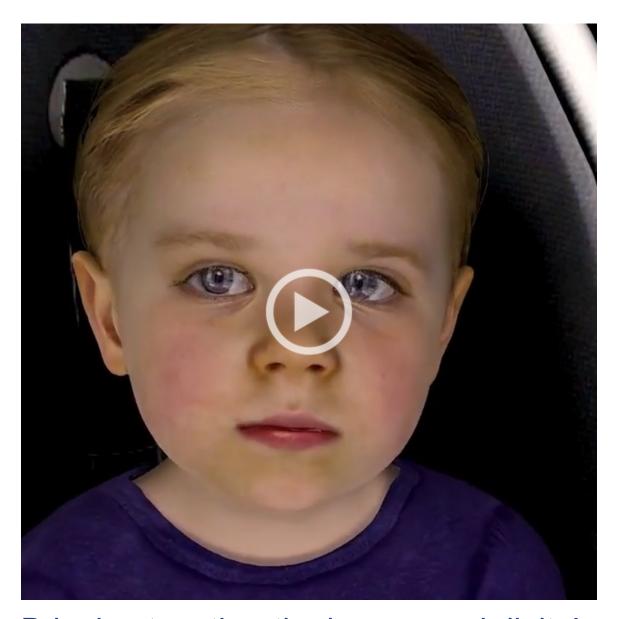Dr. Ayanna Howard, Roboticist

Developing a Digital Brain

BabyX has her own Digital Brain which is based on the human brain, enabling her to sense, learn, adapt and communicate interactively in a way that feels alive and engaging.
The Digital Brain autonomously animates BabyX in real-time, creating a natural interaction between human and machine.

Biologically Inspired

BabyX is a simulation based on a real child aged around 18 months old. The face reflects a brain state or human 'thoughts'. Facial behaviour is affected by many factors—cognitive, emotional, and physiological — and as a result BabyX provides a highly-detailed, holistic and biologically based approach, far greater than has previously been attempted in animation simulation and traditional CGI.
Identity is expressed non-verbally through very effective facial expressions and body language. Our research with BabyX has enabled us to move to autonomous animation that dyadically creates a complete response to the human the Digital Person is interacting with – creating a deeper and more meaningful connection.

Bringing together the human and digital world

Soul Machines' pioneering research extends to enabling Digital People to autonomously interact with the human world through digital interfaces. One element of our research program includes connecting BabyX with a painting robot and an audience. Can we make a Digital Person that doesn't just communicate and engage, but also creates?

"As BabyX will be engaged in the creative loop 'her' own painting evolves. We are exploring serendipity, playfulness

and the very issue of creativity. Can we make a computer which is able to do that? And if we can, then working with a digital person can make them an artistic collaborator to help us create things we have never imagined."

<div align="right">Dr. Mark Sagar, Co-Founder, Soul Machines</div>

Born of Research

Soul Machines' research in human simulation and AGI is unique in its holistic approach to embodied cognition.
Our philosophy is that a virtual brain requires a human-like embodiment to fit in a social world it can interact with, in order to learn and express in general human-like ways.

Our modelling approach draws upon the ideas of many influential thinkers in Neuroscience, Cognitive Science, Developmental Psychology, Physiology, Computer Science (Robotics, Affective Science, Artificial Life, Computer Graphics) and Language.

Advancing AI to AGI

BabyX expresses our ongoing research into how we can maximize the opportunity for human and machine collaboration. She doesn't just connect to AI systems – she is at the the forefront of AGI (Artificial General Intelligence) research. Dedicated to exploring the boundaries of how AI can become more human-like.
A key part of Soul Machines' technology is the capacity for what we call "Experiential Learning". BabyX proactively learns through direct experience with people and content. Through interactively playing with the world around her, she discovers things about it in the way that we do.

"People are going to increasingly interact with machines, and those machines are going to be driven by AI. As people, we will need to learn how to relate to and trust those machines."

<div align="right">Greg Cross, Co-Founder & Chief Business Officer, Soul Machines</div>

About Us

Soul Machines™ is an astonishing AGI company whose unparalleled Human OS platform allows the world to leverage the full capabilities and goodness of human and machine collaboration in a responsive, relatable and unprecedented way. Soul Machines is the only company with a patented Digital Brain resulting in the most incredibly lifelike dynamically interactive Digital People.

Soul Machines works with the world's leading brands to reimagine and accelerate AI as a platform for changing the customer experience.

Soul Machines is headquartered in San Francisco with R&D based in Auckland, New Zealand.

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