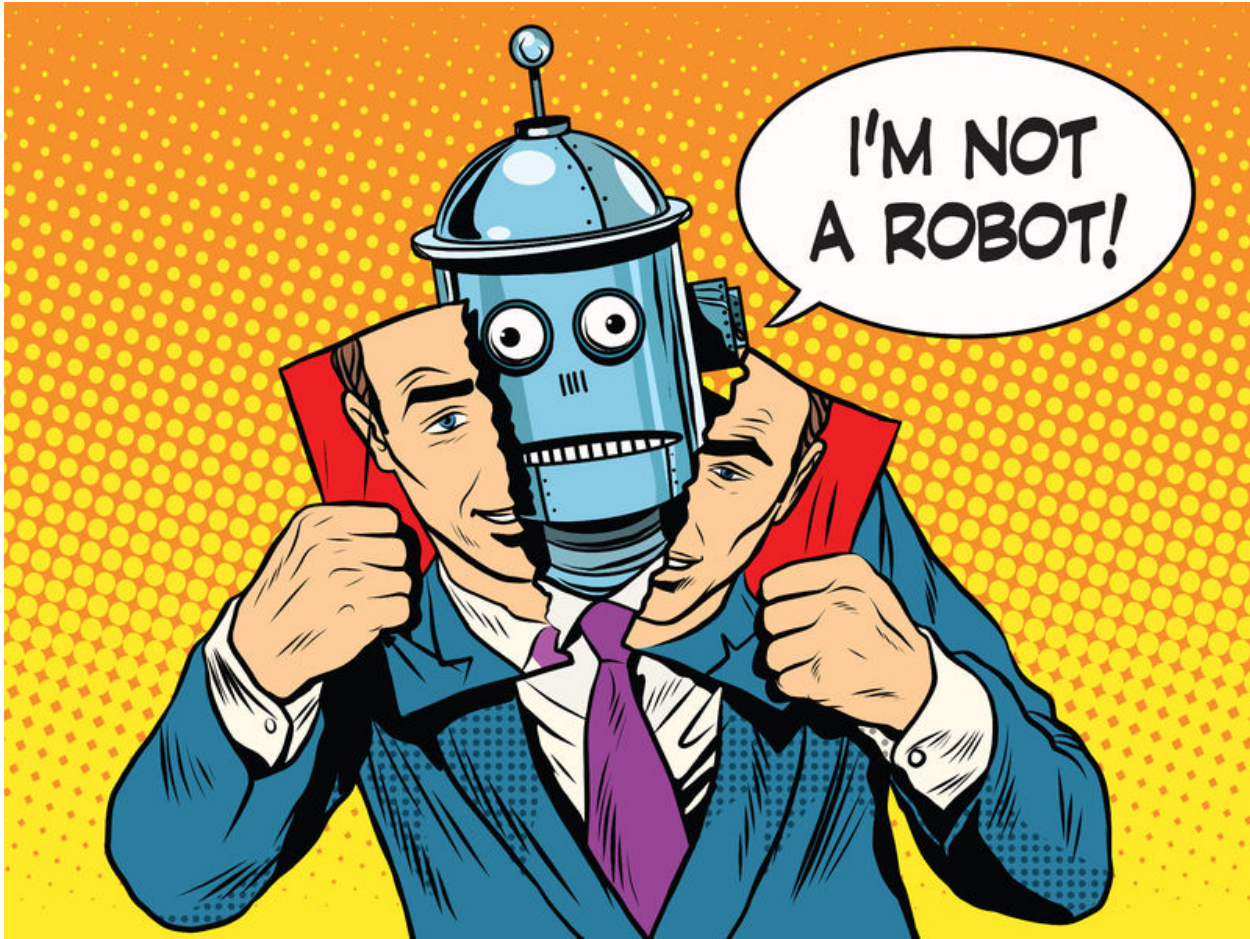


## I'm Not a Robot



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## Note to Reader:

I have been writing about rethinking civil registration systems since 2006

- [“The Challenges with Identity Verification”](#)

Over the last year, I have written 22 papers. Here’s a listing of them, by subject area, with links to each one:

- Example story of an identity’s lifecycle
  - [The Identity Lifecycle of Jane Doe](#)
- Technological Tsunami Wave of Change
  - [Harnessing the Technological Tsunami Wave of Change](#)
- One-page summary
  - [One Pager - The Age of AI, AR, VR, Robotics and Human Cloning](#)
- New age identity, data and consent
  - [Privacy Gone – AI, AR, VR, Robotics and Personal Data](#)
  - [Kids Privacy in Non-Private World - Why Even Super Hero’s Won’t Work](#)
  - [I Know Who You Are & What You’re Feeling - Achieving Privacy in a Non-Private World](#)
  - [Consent Principles in the New Age – Including Sex](#)
  - [Policy Principles for AI, AR, VR, Robotics and Cloning – A Thought Paper](#)
  - [Legal Person: Humans, Clones, Virtual and Physical AI Robotics – New Identity Principles](#)
- Robotics, clones and identity
  - [Legally Identifying Robots?](#)
  - [Rapidly Scaling Robot Identification?](#)
  - [Virtual Sex, Identity, Data & Consent](#)
  - [I’m Not a Robot](#)
- New age civil registration legal identity framework
  - [“Why the New Age Requires Rethinking Civil Registration Systems”](#)
  - [“What New Age Civil Registration Won’t Do”](#)
- New Age Assurance
  - [“New Age Assurance – Rethinking Identity, Data, Consent & Credential”](#)
- Deploying AI, AR, VR, robotics, identity, data and consent in challenging locations
  - [“Where Shit Happens”](#)
- Protecting the civil registration/vital stats infrastructure
  - [“When Our Legal Identity System Goes “Poof!”](#)
- New age architecture principles summary
  - [“New Age Architecture Principles Summary”](#)
- Leveraging Blockchain and Sovrin
  - [“A Modern Identity Solution: New Age Vital Stats/Civil Registries, Self-Sovereign Identity, Blockchain, Kantara User Managed Access & EMP Resistant Data Centres”](#)

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- Creating Estonia Version 2.0
  - [“Creating Estonia Version 2.0 – Adjusting for Changes From 1999 to 2018”](#)
- New age civil registration/vital stats design, implementation & Maintenance Vision
  - [“Guy’s New Age Civil Registration/Vital Stats Design, Implementation & Maintenance Vision”](#)

All papers are available off my website at <https://www.hvl.net/papers.htm>

## Executive Summary

A tsunami wave of technological change is approaching our planetary shores, affecting both ourselves and robots.

The paper lays out the revolution with respect to:

- Physical robots
- Virtual robots
- AI, AR, VR, Robots and Physical Environments providing an example
- Virtual sex robots
- Legal Minors
- Robotic singularity

It leads to a discussion of a new age identity. It states **“There aren’t any ways to legally differentiate robots, physical or virtual, and no thought has yet been given to singularity and legal definitions of identity. We don’t have the right legal toolkit to deal with this.”**

It proceeds to discuss:

- Robots have legal rights too
- New age legal framework
- How robots are identified
- Rapidly scaling robot identification
- OWASP group on robot security with a starting focus on robot identification

It ends with the statement:

**“This revolution requires us to rethink the underlying legal framework of who we are and who robots are. Otherwise, how will we identify a person claiming “I’m not a robot?””**

## I'm Not a Robot!

### Physical Robots

What are the chances one day, in the not too distant future, robots exist which are impossible on the surface to differentiate from a human? They're actually quite high. First, let's do some current benchmark settings...

[Watch this video to see, in Japan, the development of life-like robots to work with the aging population.](#) [Then watch Sophia the robot.](#) You'll see a robot can converse, express facial expressions and learn. Yes, I know she still looks and talks like a robot BUT this is rapidly changing.

This revolution is also extending to kids. [Little Sophia is now coming into being.](#) Likely, she is the first in a wave of robots designed for children.

With computing power doubling every year, it's not hard to imagine robots becoming more and more life-like until they reach the point they are very hard to differentiate from humans.

### Virtual Robots

Robots are not all physical or, as illustrated above, humanoid. Google, Microsoft, Amazon and others are re building virtual assistants. [Watch the Oben one here.](#) You'll see it's able to speak in multiple languages.

One doesn't have to use much of an imagination to see this, coupled with AI, soon producing virtual assistants able to do many of the task's humans do like banking, virtual shopping, investing, etc.

Further, in the not so distant future, one can see virtual assistants being rapidly created which might not look like us. Jane Doe could create one of 100 virtual robots looking and acting quite differently than herself.

### AI, AR, VR, Robots and Physical Environments

Wired magazine recently published an article "[AR Will Spark the Next Big Tech Platform – Call it Mirrorworld](#)". It's the convergence of miniature 360-degree cameras with augmented reality (AR) glasses/lenses, with virtual reality (VR) resulting in a blurring between our perceptions of physical and virtual realities.

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**An Example in the Not so Distant Future...**

Come with me on short journey into the world a few years from now where Jane is walking down a street. She's wearing AR glasses or lenses and has a communication wristband around her arm which also monitors body functions.

As she steps out the door, there are hundreds of miniature cameras on the street. They can instantly tell it's Jane walking by her face, her gait and the emotions she's displaying.

The municipality where she lives might display a message "Hi Jane! There's a winter storm coming tonight. Please ensure your car is off the street such we can clean the street once the storm is over."

As she's walking she stares at a new car driving by. Her eyeblinks/second and where she stares are all recorded. Since she stared for a while at the new car, in her glasses pops up a customized message for the new car, inviting her to come in for a test drive.

As she approaches Acme Store Inc., they'll have seen her coming long before she gets to the store. They'll know how many other times she walked by the store, what her emotions were, what advertising worked to bring her into the store, etc.

They select a customized message which is displayed in her AR glass/lens; "Jane! Wonderful warm winter mauve mittens 30% off!"

She decides to walk into the store. She's immediately greeted by her own AI generated personal sales assistant. They know LOTS about Jane and tailor what they tell her based on all her past history.

While walking down the street, Jane's communication device is constantly monitoring her body functions. It noticed a persistent rise in her blood pressure and thus sends a message, from Jane's health insurance company, to address this.

### **Now Come with Me on a Journey into the World of Sex...**

In the paper “[Virtual Sex, Identity, Data and Consent](#)” shows where the technology currently is for virtual sex. Jane Doe wants to have virtual reality sex. She can choose to have AI generated partners and/or also have other AR/VR characters with real people behind them. This brings into question the following legal identity requirements:

- The VR environment Jane is entering needs to know she is of legal age
- It needs to determine she is a person
- It also needs to protect her anonymity unless she otherwise chooses to release her identity
- Her sexual AI partners need to be able to be identified as such as do her human partners
- The other human partners need to have their legal age status confirmed
- All human partners, including Jane, need to provide their informed consent
- Both Jane and the other human partners virtual selves may or may not be required to provide their legal identity

### **What if Jane Doe’s a Minor?**

Jane Doe would like to do what her friends are talking about, i.e. having virtual sex. She will likely try very hard to enter a virtual sex environment. Hypothetically, this might include using Sally Smith’s legal digital identity, who’s an adult, to enter the VR sex environment.

My thinking is it starts with Jane Doe’s and Sally Smith’s underlying digital identities being secure. It progresses onto the security for the VR/AR goggles, lens, sensory devices, etc. being used. These too need to be able to authenticate only to Sally and not allow Jane Doe to use them to enter a sexual application.

As children increasingly become involved with both virtual and physical robots, protecting them becomes increasingly harder. Why? The robots/people they interact with might be in multiple other jurisdictions, with the AI/AR/VR environments being hosted in yet other. To properly protect them requires global laws and regulations with global enforcement.

In the paper “[The Identity Lifecycle of Jane Doe](#)”, it provides examples of minors owning both virtual and physical robots before they are of age of consent and of legal age.



### Then There's Singularity...

Robots, devices can learn and act together. It's called "[singularity](#)". [Watch this video to learn about singularity net](#). Already, one robot can do and learn something, communicate this to other robots who are now "instantly smarter".

Again, one doesn't have to use much on their imagination to see how this, coupled with computing power doubling every year, will bring a revolution to the planet. Robots, as well as hardware devices, will likely become much "more knowledgeable" than us.

### All of Which Leads to Identity...

Our existing legal identity system resides upon legal, paper-based documents attesting a person was born on a certain day, in a specific location, to named parents, with the document stating the person's name, i.e. a birth certificate. When the person wants to change their name, their gender, get married or dies, more paper-based documents are created.

This no longer works. Identity fraud is rampant. Birth certificates are easily forged. We are using old school technology, designed in the 1800's, to legally differentiate people.

**There aren't any ways to legally differentiate robots, physical or virtual, and no thought has yet been given to singularity and legal definitions of identity. We don't have the right legal toolkit to deal with this.**

We need a new legal framework. One which can legally differentiate:

- Real people from each other
- Real people from human clones
- Human clones from each other
- Real people from robots either physical or virtual
- Robots from each other
- Virtual robots from each other
- Robots acting together in singularity

### Robots Have Legal Rights Too...

As robots merge into humanoids, they'll likely become like what [Data from Star Trek illustrated](#). These entities will need to be legally defined having legal rights. The issue of defining a legal person in the new age is explored in "[Legal Person: Humans, Clones, Virtual and Physical AI Robotics – New Identity Principles](#)".

### **So, What's the Solution?**

The planet requires a new legal identity, data and consent framework. It must address the convergence of the following technologies:

- Artificial intelligence (AI)
- Augmented reality (AR)
- Virtual reality (VR)
- Robotics (both virtual and physical)
- Genetic engineering
- Nanotechnology
- Wireless communication

I've extensively written about creating a new age civil registration system which biometrically ties the citizen's identity to their registration. At birth, a person is biometrically registered as well as being given a digital legal identity to use. Citizens should be mostly in control of their identity.

This framework can be used to not only differentiate people but also human clones. Today a company, Boyalife, in China is working at cloning 100,000 cows a year going to 1 million (<https://www.boyalifegroup.com/our-business/genomics/>). In 2015, [their CEO publicly stated they could clone humans but weren't](#).

The principles for this new age legal framework are laid out in "[Policy Principles for AI, AR, VR, Robotics & Cloning - A Thought Paper](#)". Consent principles are laid out in "[Consent Principles in the New Age – Including Sex](#)".

### **How are Robots Identified?**

In the paper "[Legally Identifying Robots \(Robot Identification\)](#)", it lays out a proposed "Robot Identification Unit" (RIU). It also discusses legally registering robots. Yet, given the "insane speeds" robots can be virtually created, how will this scale?

### **Rapidly Scaling Robot Identification?**

The paper "[Rapidly Scaling Robot Identification?](#)" explores this. It discusses highly automating the process AND states all new age civil registration services around the planet must be able to instantly check with each other if the robot exists.

### **OWASP Group on Robot Security**

I've recently created an OWASP (Open Web Application Security Project) group to focus on robot security. It's starting point is robot identification. I want to bring together the robotic industry, security, privacy and government experts to define standards for robotic identification. [The group can be found here.](#)

### **Summary**

**This revolution requires us to rethink the underlying legal framework of who we are and who robots are. Otherwise, how will we identify a person claiming "I'm not a robot?"**

[Please go here for a detailed listing of the 19 papers I've written on this.](#) We need to collaboratively, globally, work together to create a new legal identity, data and consent framework.

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**About the Author**

Guy Huntington is a veteran identity architect, program and project manager who's lead as well as rescued many large identity projects with many of them involving identity federation. His past clients include Boeing, Capital One, Kaiser Permanente, WestJet, Government of Alberta's Digital Citizen Identity and Authentication Program and Alberta Blue Cross. As one of his past clients said "He is a great find, because he is able to do high quality strategic work, but is also well-versed in project management and technical details, so he can traverse easily from wide to deep. With Guy, you get skills that would typically be encompassed in a small team of people."

