



The Investment Theme We Like, For A Technology We Hate: Facial Recognition Technology (FRT) and Dual-Use Applications

Portfolio Attribution

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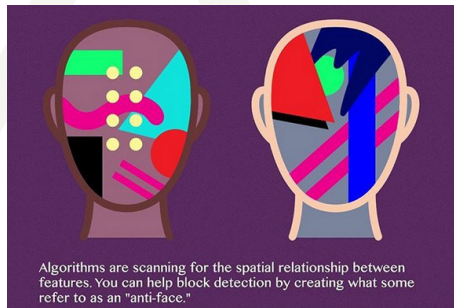
Stirling Larkin, CIO



So that the colonial rebels may aim more accurately and preserve limited reserves, during the Battle of Bunker Hill, American Revolutionary Colonel William Prescott, instructed his troops, “Do not fire until you see the whites of their eyes”, referring to the Imperial British Redcoats fast marching upon them.

Wherein George Washington’s continental rebels could identify foe by virtue of their distinctive scarlet tunics (red coats), today’s subjugators in the United States, Australia and across the world are far more clandestine, subversive and unidentifiable, thanks in large part to the increasingly dual-use applications of Facial Recognition Technologies (FRT) and apparatus of the surveillance state.

Ironically, civil disobedience and to be an American rebel (*‘punk’*) today involves contorting your eyes, misconstruing your facial features and avoiding at all costs looking directly into the facial recognition cameras.



The objective of face recognition technologies (FRTs) is to efficiently detect and recognise people captured on camera and while every system requires a **trade-off between accuracy and privacy**, there does not today exist a unified set of rules to govern their use and what there is remains a disjointed policy mangle.

In financial analysis, this is referred to as a **Knighthian Uncertainty**, where a lack of quantifiable knowledge about possible occurrences and the persistent prevalence surrounding the unpredictability of future events defuncts any measured approach to quantify risks.

So, it became material to such analysis that **Australian and British privacy regulators last week, opened a joint probe into Clearview AI Inc.**, an American Techupstart who has been providing facial recognition

software to private conglomerates, listed US S&P500 companies, law enforcement agencies, universities and individuals by way of *‘scraping’* data and biometrics off individuals’ Facebook, Instagram, Twitter, LinkedIn and social media posts.

Clearview is facing growing scrutiny over the copious quantity of unauthorised photos they scraped from social media platforms and how the New York-based company continues to share those biometrics with law enforcement agencies in the wake of the George Floyd, Breonna Taylor and Rayshard Brooks mortalities.

In June, IBM [IBM:US] announced it was leaving the facial recognition business altogether and its CEO questioned whether it was an **appropriate tool for law enforcement**; this was followed by Microsoft [MSFT:US] and Amazon [AMZN:US] each announcing that they would—at least temporarily—prohibit law enforcement agencies from using their facial recognition software.

The **Justice in Policing Act**, also introduced in Congress earlier in June, specifically prohibited facial recognition analysis of officers’ body camera footage.

In the context of law enforcement’s use of biometric facial recognition to monitor public places, however, it does not appear that such use would run afoul of the protections afforded by the US Constitution.

Legal Status Quo

We do not have a legal right of privacy in the facial features we show in public.

- “What a person knowingly exposes to the public . . . is not a subject of Fourth Amendment protection.”
United States v. Miller, 425 U.S. 435 (1976)
- “No person can have a reasonable expectation that others will not know the sound of his voice, any more than he can reasonably expect that his face will be a mystery to the world.”
United States v. Dionisio, 410 U.S. 1 (1973)

Facial recognition records the spatial geometry of distinguishing features of the face; different practitioners use different methods of facial recognition, however, all focus on measures of key features of the face.

Keeping FRT accountable and respectful of society’s values and norms is an increasingly important requirement for commercial advocates of the burgeoning technology, best exemplified by Japan’s NEC [6701:JP], widely considered the world’s best FRT manufacturer and for the fifth consecutive time, ranked the best by the US National Institute of Standards and

Technology (NIST), achieving the highest matching accuracy in benchmark testing.

A total of 49 organisations (48 companies and one research institution) participated in NIST’s facial recognition technology benchmark testing, NEC’s facial recognition technology achieved the highest matching accuracy, with an error rate of 0.5% for data on twelve million people and it also achieved the highest search rate at two hundred and thirty million searches per second, achieving the best result in terms of evaluating changes due to aging.

Developed previous to the Novel Coronavirus outbreak, NEC’s Field Analyst biometric identification technology has been successfully developed to detect people wearing masks, sunglasses and hats, which, needless to say has put NEC at the front of the queue for commercial clients.

Despite Japanese Olympic Committee (JOC) President Yasuhiro Yamashita postponing the Summer 2020 Olympics, NEC had already secured the supply of facial recognition systems and volunteer support systems contracts, with peripheral business including airport radar and control system upgrades and the supply of customs systems and check-in systems.

Approximately a year ago, NEC also announced a partnership with Star Alliance to develop a biometric identification platform and utilising NEC’s facial recognition back-end systems and this deal puts NEC right at the heart of the world’s largest airline alliance with twenty-eight members who fly to nearly fourteen hundred airports globally.

As with all technological advances throughout history, we must continue to examine how the technology is embraced – the broader hope is that by applying machine learning capabilities with FRT’s, dense congregations can be protected and contingencies can be mitigated, after all, MIT’s 2001 Technology Review named biometrics as one of the *“top ten emerging technologies that will change the world.”*

Always liking investment themes that embrace technology and with-it productivity growth (the only natural driver of economic prosperity), FRT technology also has very visceral reasons to be hated, best summated by **H.G. Wells**, *“Going over the heads of the things a man reckons desirable, no doubt invisibility made it possible to get them but it made it impossible to enjoy them when they are got.”*

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