

Countering Misinformation with Neural Networks

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Abstract

Recently, there has been concern over the use of neural networks to generate content intended to manipulate or deceive the viewer. In two projects, *Infodemic* (2020) and *GoingViral* (2020), we use neural networks to generate videos intended to inform viewers and correct misinformation about the coronavirus. *Infodemic* is a video generated using neural networks that questions the mediated narratives created by social media influencers and celebrities about the coronavirus. *Going Viral* is an interactive artwork that invites people to intervene in the spreading of misinformation by sharing informational videos about COVID-19 that feature algorithmically generated celebrities, social media influencers, and politicians that have previously shared misinformation about coronavirus.

Background

The term ‘infodemic’ gained popularity in 2020 when the Director of the WHO stated: “we’re not just fighting an epidemic; we’re fighting an infodemic. Fake news spreads faster and more easily than this virus, and is just as dangerous” (Ghebreyesus 2020). During the pandemic, conspiracy theories about the virus began to spread rapidly. Influencers began profiting from fake cures like colloidal silver or claimed that the virus could be prevented by drinking hot water, taking megadoses of vitamins, or using bleach internally. Hydroxychloroquine was pushed despite a lack of evidence of its effectiveness. Some of the most bizarre conspiracy theories were claims that 5G networks were causing or exacerbating the virus, which led to cell phone towers being burned down, and that Bill Gates created the

virus to implant microchips into people to track them (Ball and Maxmen 2020).

Project Details

The speakers featured in both projects have spread misinformation about the coronavirus and are generated using a conditional generative adversarial network (cGAN). The dialogue is taken from academics, medical experts, and journalists. In the generated videos, the influencers deliver public service announcements or present news stories that counter the misinformation they have spread.

The models for *Infodemic* were trained on corpora of multiple individuals simultaneously resulting in a talking head that morphs between different speakers or becomes a glitchy Frankensteinian hybrid of different algorithmically-generated people. The video’s painterly qualities evoke the mutation of the coronavirus (fig. 1).



Fig. 1. *Infodemic*, 2020, Derek Curry and Jennifer Gradecki, video still, Image courtesy of the artists.

In *Going Viral*, viewers share the algorithmically generated videos on social media, to intervene in the infodemic that has developed alongside the pandemic.

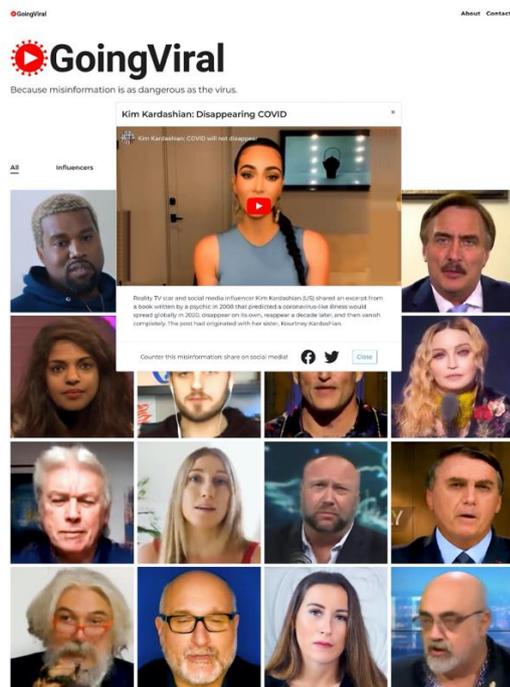


Fig. 2. *Going Viral*, 2020, Derek Curry and Jennifer Gradecki, screenshot of website with algorithmically generated videos, image courtesy of the artists.

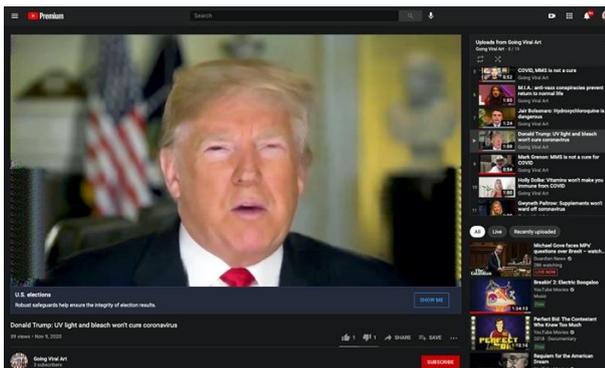


Fig. 3. *Going Viral*, 2020, Derek Curry and Jennifer Gradecki, screenshot of algorithmically generated video on YouTube, image courtesy of the artists.

The full-length *Infodemic* video can be viewed online at <https://vimeo.com/443412717>. The *GoingViral* website is available online at <https://www.goingviral.art/>.

References

- Ball, Philip and Amy Maxmen. 2020. "The Epic Battle Against Coronavirus Misinformation and Conspiracy Theories." *Nature*, May 27, 2020.
- Ghebreyesus, General Tedros Adhanom. 2020. Speech, Munich Security Conference, February 15, 2020.

Biographies

Derek Curry BFA Photography, MFA New Genres, PhD Media Study, is a US-based artist-researcher whose work addresses spaces for intervention in automated decision-making systems. Recent work has addressed automated decision-making processes used by automated stock trading systems and Open Source Intelligence (OSINT). <https://derekcurry.com/>

Jennifer Gradecki BFA Sculpture / Psychology, MFA New Genres, PhD Visual Studies, is a US-based artist-theorist whose work facilitates a practice-based understanding of socio-technical systems that evade public scrutiny. Her investigations have focused on Institutional Review Boards, financial instruments, technologies of mass surveillance, and artificial intelligence. www.jennifergradecki.com.

Curry and Gradecki have exhibited and presented on their work at venues including Ars Electronica (Linz), Art Machines (Hong Kong), New Media Gallery (Zadar), AC Institute (New York), Science Gallery Dublin, Critical Finance Studies (Amsterdam), ISEA (Vancouver), ADAF (Athens), and the Centro Cultural de España (México). Their projects have been funded by Science Gallery Dublin and the NEoNFestival.