Editorial

Dear Readers,

Welcome to the first issue of our 2024 SMCS eNewsletter. I hope everyone had a wonderful Holiday Season and that 2024 is off to a great start!

The end of 2023 and the beginning of 2024 has seen many innovations in generative artificial intelligence (AI) and foundation models. Today, almost all large corporations have some version of a large language model, or an image/video/audio generation method. OpenAI's Sora is the latest model to generate realistic videos directly from textual prompts. As 2024 is a year of many elections worldwide, it is important that we raise awareness about the threats that such models can have on the creation of deepfakes and fake news. The group Democracy Reporting International released a report in 2022 [1] highlighting the threats of text-to-image generation to politicians and minority groups. At the time, deepfakes were not yet "at the credibility threshold" as models had some reported difficulties, such as producing hands [2]. Fast-forward two years, we have already seen deepfake media wreaking havoc worldwide. In January 2024 alone, celebrity Taylor Swift had sexually explicit, non-consensual deepfake images circulated on social media [3] and New Hampshire residents received deepfake-generated robocalls mimicking USA President Joe Biden's voice discouraging them from voting [4]. In February 2024, a finance worker in Hong Kong attended a videocall with what he thought was the company's Chief Financial Officer and several other people. They were, in fact, all deepfake modified videos and the worker ended up transferring $25 million to fraudsters [5]. Governments are quickly running to establish regulations around these models [6, 7], thousands of AI experts have called for a pause on development of such powerful AI models until regulations are in place [8], and researchers are running to develop solutions to detect deepfakes in a quickly evolving technological landscape. As a Society with many experts in AI, SMCS can and should play a key role in this endeavour.

In this Issue, Prof. Leopoldo Filho (UNESP, Brazil) and IEEE Fellow Prof. Anderson Rocha (UNICAMP, Brazil) present a Feature Article on the rise of synthetic media generation, highlighting the impact they can have on society, their advancements, and ethical considerations. In our "Industry Corner" column, we interview Dr. Nikolay Gaubitch, the Director of Research at Pindrop, an information security company that provides risk scoring for phone calls to detect fraud and authenticate callers. Pindrop was able to pinpoint which AI model generated the Joe Biden deepfake mentioned above. Dr. Gaubitch will provide advice for students considering work in this field. Next, in the "Student Corner" column, we showcase the SMCS Student Chapter at Óbuda University, as well as the work of two SMCS student authors. We hope you enjoy these interviews and appreciate your feedback, including suggestions for future interviewees.

For News items, we welcome three new SMCS Student Chapters and a new Chapter, we provide reports on Distinguished Lectures and a report on the Tunisia SMCS Chapter, as well as a Call for Hosting Distinguished Lectures aimed at all SMCS Technical Committees. We also present a Call for SMCS Award Nominations, some highlights of the IEEE SMCS/UCF Human-Machine Systems and Digital Twin Technologies Workshop, held at the University of Central Florida, earlier this year, and a funding opportunity from the IEEE Tech4Good program. Lastly, we present several Calls for Participation and Call for Papers for several SMCS-sponsored events, including a Call for Special Issue papers for the SMCS Transactions on Cybernetics.

I hope you enjoy this March issue of the SMC Society eNewsletter. Our editorial team (A. Ávila, L. Dong, J. Dong, C. Lai, D. Paul, W. Qi, and H. Su) worked hard over the last few months to collect material we feel is relevant and of interest to you and your career. If you have any suggestions for improvements, please let us know.

References:

[1] Böswald, L. M., & Saab, B. A. (2022). What a Pixel Can Tell: Text-to-Image Generation and its Disinformation Potential. Democracy Reporting International.

[2] https://www.buzzfeednews.com/article/pranavdixit/ai-generated-art-hands-fingers-messed-up

[3] https://www.scientificamerican.com/article/tougher-ai-policies-could-protect-taylor-swift-and-everyone-else-from-deepfakes/

[4] https://www.cnn.com/2024/01/24/politics/deepfake-politician-biden-what-matters/index.html

[5] https://www.cnn.com/2024/02/04/asia/deepfake-cfo-scam-hong-kong-intl-hnk/index.html

[6] https://www.responsible.ai/a-look-at-global-deepfake-regulation-approaches/

[7] https://www.brennancenter.org/our-work/research-reports/regulating-ai-deepfakes-and-synthetic-media-political-arena

[8] https://futureoflife.org/open-letter/pause-giant-ai-experiments/

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