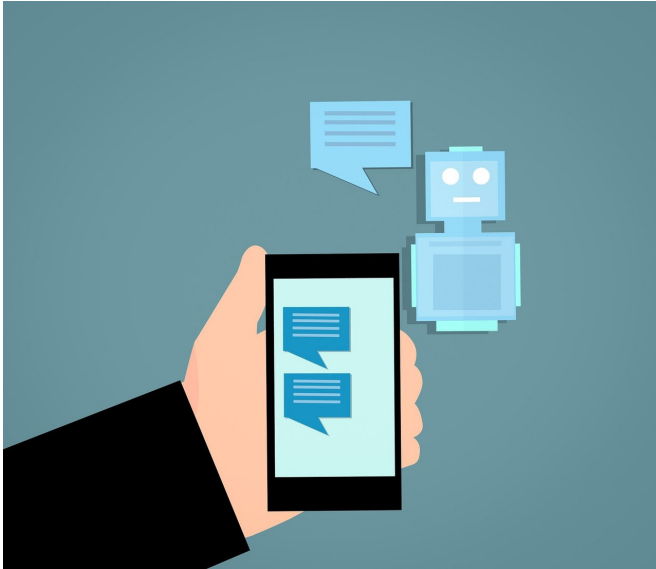


Facebook bots to create a friendlier universe

17 April 2020, by Peter Grad



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All Facebook is saying is give peace a chance.

The folks at the mammoth social networking publisher want a kinder, friendlier and safer digital neighborhood for their denizens. And with 2.5 billion users, achieving that goal is no small task.

To that end, Facebook has created a parallel universe of sorts that will mimic the actions and behaviors of its users in an effort to detect how to best achieve a more harmonic community.

In a [research paper](#) titled "WES: Agent-based User Interaction Simulation on Real Infrastructure," the new neighborhood is described as being filled with thousands of bots that set out to interact with each other. They will "like," "friend" and share just as real users do, but they will also be programmed to engage in bad [behavior](#). That means the bots will learn how to conduct scams and phishing expeditions, and even post "wrongthink,"

assertions based on propaganda, outright lies or politically incorrect notions. The purpose is to learn how best to combat anti-social activity on the [platform](#).

The artificial world, dubbed WW, for Web Enabled Simulation, will rely on hard-coded activities as well as learned behavior via reinforcement learning. Bots will participate in a number of scenarios such as trying to exploit vulnerabilities of users or hacking personal information, for instance, photos or other private data. The target bots will be programmed to perform behaviors as human participants do, either submitting to or fending off intruders.

As Facebook researchers learn more about the dynamics of bad behaviors—harassment, abuse, scams—they can take measures to mitigate them.

These operations will all be performed in the background. They will not interfere with real users.

"Bots must be suitably isolated from real users to ensure that the [simulation](#), although executed on real platform code, does not lead to unexpected interactions between bots and real users," the WES report states.

The intelligence behind WW draws from numerous fields of research: search-based [software engineering](#), machine learning, [programming languages](#), multi-agent systems, [graph theory](#) and game [artificial intelligence](#).

As the project approaches a more ideal system of social networking, Facebook researchers say they expect their findings will be used in the real world, as well.

"Community behavior is increasingly prevalent in software applications, for example, for travel, accommodation, entertainment and shopping," the report says. "These systems use social interactions

so that each user can benefit from the collective experience of other users. Although this paper focuses on Facebook's WW system, the concepts and approach could also find application in platforms used by other organizations."

WW follows an earlier simulation by Facebook called Sapienz, which studied behavioral trends. But the older program ran on an isolated Facebook platform. WW will operate invisibly in real time on an actual Facebook platform.

"Unlike traditional simulation in which a model of reality is created," the report states, "a WES system is built on a real-world software platform."

More information: arxiv.org/abs/2004.05363

WES: Agent-based User Interaction Simulation on Real Infrastructure, arXiv:2004.05363 [cs.SE]
arxiv.org/abs/2004.05363

research.fb.com/publications/w...real-infrastructure/

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