

# Generative Agents: Interactive Simulacra of Human Behavior

Joon Sung Park  
Stanford University  
Stanford, USA  
joonspk@stanford.edu

Joseph C. O'Brien  
Stanford University  
Stanford, USA  
jobrien3@stanford.edu

Carrie J. Cai  
Google Research  
Mountain View, CA, USA  
cjcai@google.com

Meredith Ringel Morris  
Google DeepMind  
Seattle, WA, USA  
merrie@google.com

Percy Liang  
Stanford University  
Stanford, USA  
pliang@cs.stanford.edu

Michael S. Bernstein  
Stanford University  
Stanford, USA  
msb@cs.stanford.edu



**Figure 1: Generative agents are believable simulacra of human behavior for interactive applications.** In this work, we demonstrate generative agents by populating a sandbox environment, reminiscent of The Sims, with twenty-five agents. Users can observe and intervene as agents plan their days, share news, form relationships, and coordinate group activities.

## ABSTRACT

Believable proxies of human behavior can empower interactive applications ranging from immersive environments to rehearsal spaces for interpersonal communication to prototyping tools. In this paper, we introduce generative agents: computational software agents that simulate believable human behavior. Generative agents wake up, cook breakfast, and head to work; artists paint, while

authors write; they form opinions, notice each other, and initiate conversations; they remember and reflect on days past as they plan the next day. To enable generative agents, we describe an architecture that extends a large language model to store a complete record of the agent's experiences using natural language, synthesize those memories over time into higher-level reflections, and retrieve them dynamically to plan behavior. We instantiate generative agents to populate an interactive sandbox environment inspired by The Sims, where end users can interact with a small town of twenty-five agents using natural language. In an evaluation, these generative agents produce believable individual and emergent social behaviors. For example, starting with only a single user-specified notion that one agent wants to throw a Valentine's Day party, the agents autonomously spread invitations to the party over the next two

Permission to make digital or hard copies of part or all of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for third-party components of this work must be honored. For all other uses, contact the owner/author(s).

UIST '23, October 29–November 1, 2023, San Francisco, CA, USA  
© 2023 Copyright held by the owner/author(s).  
ACM ISBN 979-8-4007-0132-0/23/10.  
<https://doi.org/10.1145/3586183.3606763>