

IMPROVISER: Multi-persona Co-creation System Enhances Story Creativity

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Abstract

Storytelling, a cornerstone of human culture, thrives on creativity—a domain where modern AI systems often falter. While these systems excel at maintaining narrative coherence, they frequently produce technically sound yet predictable narratives. To address this gap, we introduce IMPROVISER, a collaborative system grounded in psychological theories of creativity, specifically the Blind Variation and Selective Retention (BVSr) framework. IMPROVISER leverages multiple AI personas, each embodying distinct narrative styles, to generate diverse story variations. Users iteratively refine these ideas through selective retention, balancing novelty, coherence, and personalization. In controlled experiments, IMPROVISER outperformed single-persona and chatbot-based systems on creativity and diversity, producing longer, more spatially rich stories without compromising readability. These results empirically validate BVSr’s role in computational creativity and establish a framework for human-AI co-creation, demonstrating how AI can amplify—rather than replace—human creative potential.