

Studies in Applied Information Technology, Oct 2021
ISBN 978-91-8009-454-2 (PRINT), ISBN 978-91-8009-455-9 (PDF)

Generative Comics

A Computational Approach to Creating Comics Material

Doctoral Dissertation by

Malik Nairat



**UNIVERSITY OF
GOTHENBURG**

To be publicly defended on October 15th, 2021 at 14.00
Room 473, 4th floor, Building Jupiter, Lindholmen.

Department of Applied Information Technology
University of Gothenburg
SE-412 96 Gothenburg

Abstract

Digital storytelling can be employed as a tool that incorporates human creativity with technology. It synthesizes multimedia based elements to create engaging stories and compelling narratives. To this end, this research presents an approach that can be used as an assistant tool for comics artists. It focuses on generating comics-based narratives through a system that integrates three main components in the creation process, which are: *agent-based system* which generates raw narrative material based on the behavior of the system's agents, an *interactive evolution process* where the author participate in the creation process, and *comics generating engine* that creates final comics as outputs. The general scope of the research is to construct a generative system that has the ability to create comics and fictional characters.

The research utilizes the method of Research through Design (RtD) which favors evolution and iteration of the construction of the artifact based on trial and error to better solve complex design problems (Smith & Dean, 2014). Relevant aspects of computer science, visual arts, comics and storytelling have been combined together to form a unified research project that can answer the research questions: how can digital technology be employed in generating comics; how can it contribute to the creation of novel art forms; and how can it help artists in their creative practice.

Through a review of generative comics researches, four categories are identified: Unified Comics Generators which investigate methods for generating both the story structure and its visual comics-based representation, Comics Elements Generators which explore various techniques for generating or employing particular comics elements such as panels, splashes, speech bubbles, and others, Visual Representation Generators which rely on importing the content from other narrative sources such as video games, video streaming, or chatting conversations through social media, and Generative Comics Installations which produce and present comic stories in a form of exhibited installations by capturing and manipulating live pictures of the audience.

Research findings are discussed in terms of story characterization, the generated stories, and the comics visual representation. The constructed system showed high flexibility, scalability, competency, and capability that entitle it to be employed in various applications for different purposes.

Keywords: *comics, multi-agent systems, interactive evolution, generative storytelling, digital comics.*

Language: English

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