

# Creativity Support: The Mixed-Initiative Composition Space

Andruid Kerne, Eunye Koh

Interface Ecology Lab, Center for the Study of Digital Libraries  
Computer Science Department, Texas A&M University, College Station, TX 77843, USA  
{andruid, eunye}@csdl.tamu.edu

## ABSTRACT

Creativity support is an important and challenging emerging area of research. combinFormation is being developed as a tool to support creativity through a mixed-initiative composition space. The system combines searches and information feeds, representing relevant information collections as compositions of image and text surrogates. The composition space affords human manipulation. This method has been shown to support information discovery in The Design Process, an interdisciplinary undergraduate course. In this demo, we demonstrate how combinFormation can be used to explore and discover information in digital libraries such as ACM Digital Library and the International Children's Digital Library.

## Categories and Subject Descriptors

H5.m. [Information interfaces and presentation] (e.g., HCI): Miscellaneous.

**General Terms:** Design, Human Factors

## Keywords

creativity, information discovery, information representation

## 1. INTRODUCTION

Most information systems enable users to search for, browse, or collect information. Our approach integrates support for these user activities into a single tool to support creativity through information discovery [4]. By *information discovery*, we mean that the participant responds to and manipulates found information to develop new ideas (creative ideation).

combinFormation [1][3] is a mixed-initiative tool that promotes information discovery by synthesizing processes of searching, browsing, collecting, mixing, organizing, and thinking about information. Image and text surrogates engage complementary cognitive subsystems. Each collection of information resources is represented as a connected whole. Temporal visual composition generates a continuously evolving mixed-initiative composition space. Agents work together with the participant to find relevant information, create visual surrogates (bookmarks) with clippings from documents, and compose the visual surrogates (Figure 1). Meaning develops through juxtapositions of surrogates, which create new relationships. This sets the stage for the emergence of new ideas. To evaluate the system, we conducted a field study in the Design Process class. Students performed better in developing new inventions while using combinFormation to collect prior work, than they did when using Google and Word [3].

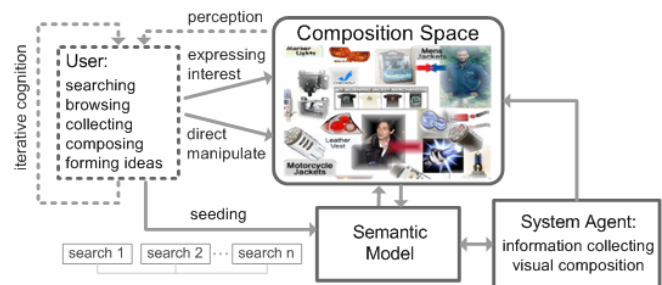


Figure 1. Mixed initiatives: Agents support the user finding and collecting relevant information to develop ideas.

## 2. DEMO OVERVIEW

We will demonstrate combinFormation with the ACM Digital Library and International Children's Digital Library [2], developing scenarios of information discovery. For example, when a researcher needs to develop a research project topic, s/he searches for related projects and papers. While s/he is browsing related information, s/he collects relevant clippings, and uses the found information as ingredients in ideation. combinFormation's mixed-initiative composition space supports these processes. In the demo, participants can formulate queries on research topics, gather relevant results, eliminate irrelevant results, annotate, and author collections. They can connect, compare, and compose information using design tools, which help them develop ideas. Fluid interface components enable directing the agents.

## 3. ACKNOWLEDGMENTS

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## 4. REFERENCES

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