2020

Full Bloom: Diegetic UI for musical phrases in virtual reality

Peter Armstrong
Rochester Institute of Technology

Elliot Cole

Peter Ferry

Joe Geigel
Rochester Institute of Technology

Susan Lakin
Rochester Institute of Technology

See next page for additional authors

Follow this and additional works at: https://scholarworks.rit.edu/frameless

Part of the Audio Arts and Acoustics Commons, Composition Commons, Game Design Commons, Interactive Arts Commons, Interdisciplinary Arts and Media Commons, and the Music Performance Commons

Recommended Citation
Armstrong, Peter; Cole, Elliot; Ferry, Peter; Geigel, Joe; Lakin, Susan; Swientonioski, Richard; Talis, Zachary; and Thomas, Jennie (2020) "Full Bloom: Diegetic UI for musical phrases in virtual reality," Frameless: Vol. 3 : Iss. 1 , Article 25.
Available at: https://scholarworks.rit.edu/frameless/vol3/iss1/25

This Paper is brought to you for free and open access by RIT Scholar Works. It has been accepted for inclusion in Frameless by an authorized editor of RIT Scholar Works. For more information, please contact ritscholarworks@rit.edu.
Full Bloom: Diegetic UI for musical phrases in virtual reality

Authors
Peter Armstrong, Elliot Cole, Peter Ferry, Joe Geigel, Susan Lakin, Richard Swientonioski, Zachary Talis, and Jennie Thomas

This paper is available in Frameless: https://scholarworks.rit.edu/frameless/vol3/iss1/25
Full Bloom:  
Diegetic UI for Musical Phrases in Virtual Reality

Peter Armstrong*  
Rochester Institute of Technology

Elliot Cole

Peter Ferry  
Rochester Institute of Technology

Joe Geigel

Susan Lakin  
Rochester Institute of Technology

Richard Swientonioski

Zachary Talis  
Rochester Institute of Technology

Jenny Thomas

Rochester Institute of Technology

Abstract: We propose a novel system for communicating musical note pitch and sequence information to users within a virtual reality environment. Our approach utilizes ‘Blooms,’ objects that resemble flowers with various petal arrangements. These formations, when constructed in view of users, act as diegetic, user-parsable encodings of their inputs. Blooms exist within the virtual space as simulated physics objects that collectively serve the role of a user interface.

Keywords: music, musicality, audio, sound, user interface, diegetic user interface, UI, user intent, input encoding, virtual reality, VR

* Peter Armstrong
Submitted November 30, 2020
Accepted June 21, 2021
Published online July 15, 2021
FOR ALL SUBMISSIONS, address A-C

A. What is the purpose of the submission? Is it a case study? Is it processual? Is it hypothetical? Is a research question or framing concept presented?

   Case Study

B. Does the document, as is, tell the story in the amount of wordage presented?

   Yes

   • If so, great! Feel free to compliment the author in this regard.

   • If not, what would improve its readability and the reader’s understanding of the project?

C. Are images/figures/tables used?

   • If so, do they have captions that help to explain their part of the narrative? If there are no captions, please ask the author to undertake this.

   • If there are no images or links, consider whether or not images will enhance the publication. Could you make specific suggestions to this effect for the author(s)?

   Yes. The link to the video was particularly helpful.

E. Consider these questions for DEMOS or ABSTRACTS ONLY (NOT FULL PAPERS):

   • Does the submission contribute new knowledge to the field of XR?

   Yes – an interesting application of the technology in a very specific discipline

   • Are the concepts in the submission addressed succinctly, even if only a prototype or work-in-progress?

     Yes

   • Does the title reflect the content of the submission?

     Yes

   • Is the subject relevant to our readership (see scope and content of our journal/online)?

     Yes

   • Should the text be expanded or condensed? If so, where and how? Please be as specific as possible in order to provide the Author with the opportunity to take advantage of constructive feedback.

     No – it’s fine the way it is

   • Is the text written clearly and organized logically?

     Yes