The Journal of Open Source Software

Augmented Reality UNIX C++ Engine for Enhanced Visual Guidance in Woodworking

Andrea Settimi [1¶], **Hong-Bin Yang** [1], **Julien Gamerro** [2], **and Yves Weinand** [1]

1 Institution Name, Country **2** Independent Researcher, Country ¶ Corresponding author

DOI: 10.xxxxxx/draft

Software

- Review
- Repository
- Archive

Editor: Open Journals

Reviewers:

- @openjournals

Submitted: 01 January 1970
Published: unpublished

Summary

test 52

Statement of need

Functionalities

Layer-stack flow

The layer stack is primarily responsible for managing the flow control of the AR engine. Designed as a modular system, each layer encapsulates the logic for a specific domain of the AR application, such as camera processing, object tracking, UI, and rendering. The general order and expansion of these layers can be configured in the top-level main file `ACApp.cpp`.

Each layer in the stack inherits from a superclass interface defined in `Layer.h`, which includes event-like methods triggered at various points during frame processing (e.g., `OnFrameAwake()`, `OnFrameStart()`,). These methods are invoked by the main `Run()` function in the singleton application loop from `Application.h`. This design allows application tasks to be containerized and executed sequentially while facilitating data exchange between specific layers through the `AIAC_APP` macro, enabling the retrieval of any particular layer data. Exchange between layers can also take place in a more structured way with the integrated event system (contained in ApplicationEvent.h), which includes an event queue that processes events at the end of the main loop before triggering them.

Geometry framework

Computed Feedback System

AR rendering

Acknowledgements

References