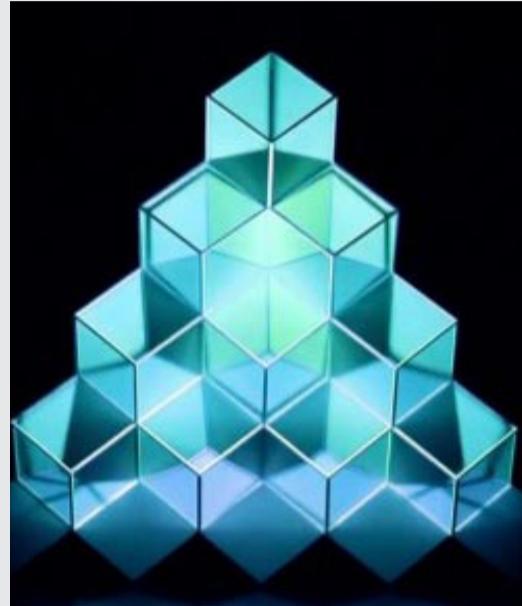




S.A.R.I. - Spatial Augmented Reality Investigation

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Abstract



Spatial augmented reality (projection mapping) is a technology where video projectors overlay video and image content onto physical objects. This project is an investigation into projection mapping, exploring projection mapping tools, visualist programming environments and visual content creation tools. These tools are used to process social media feeds and to create reactive and generative visuals in an interactive installation through the use of creative coding.

Projection Mapping



Projection mapping [1] is a projection technique that turns almost any surface into a dynamic video display. It is a creative medium where projectors are used to bring everyday objects to life for use in advertising, live concerts, theater, gaming and interactive art installations. Specialized software such as MadMapper [2] is used to align virtual content with physical objects to achieve optical illusions and notions of movement onto previously static objects and surfaces.

Key Technologies



MadMapper is a tool for video-mapping projections. It allows for the mapping of textures onto physical objects in real time and can take input from the OS X based framework, Syphon [3].



Processing [4] is a programming language and development environment for creative coding. The language builds on Java, but uses a simplified syntax and graphical programming model.

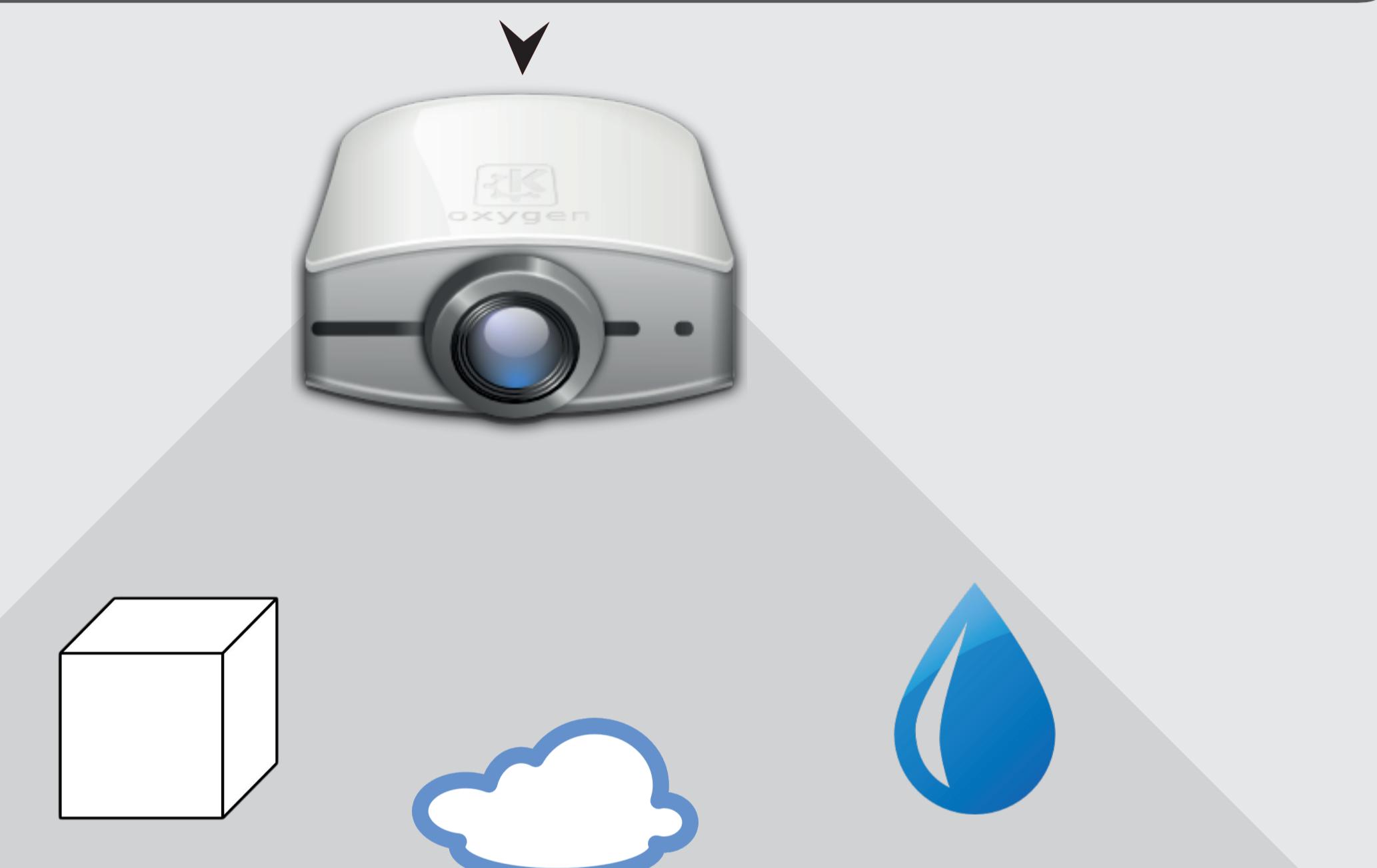
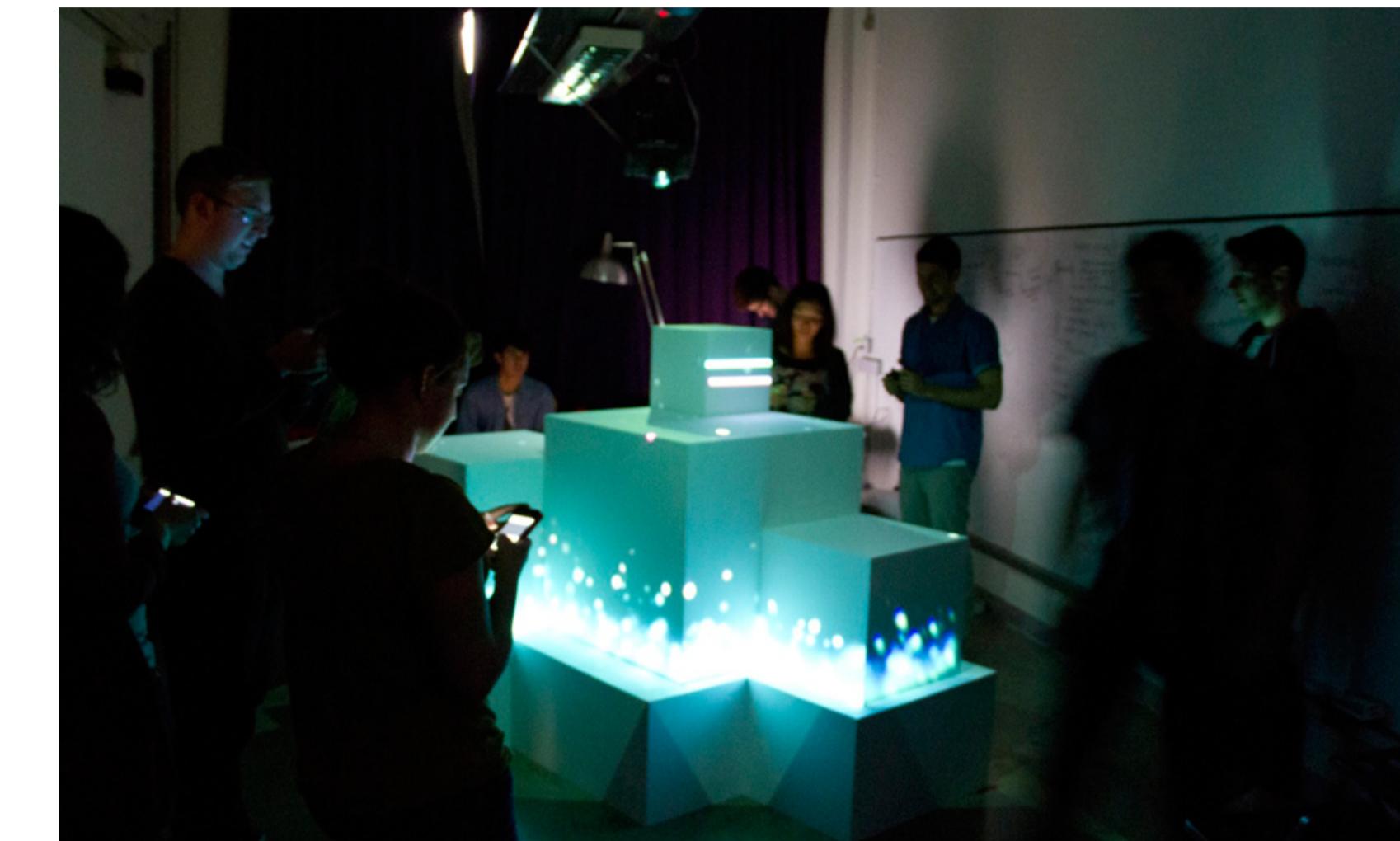


The Twitter API [5] enables programmers to create applications, websites, widgets, and other projects that interact with Twitter. Programs talk to the Twitter API over the HTTP protocol.



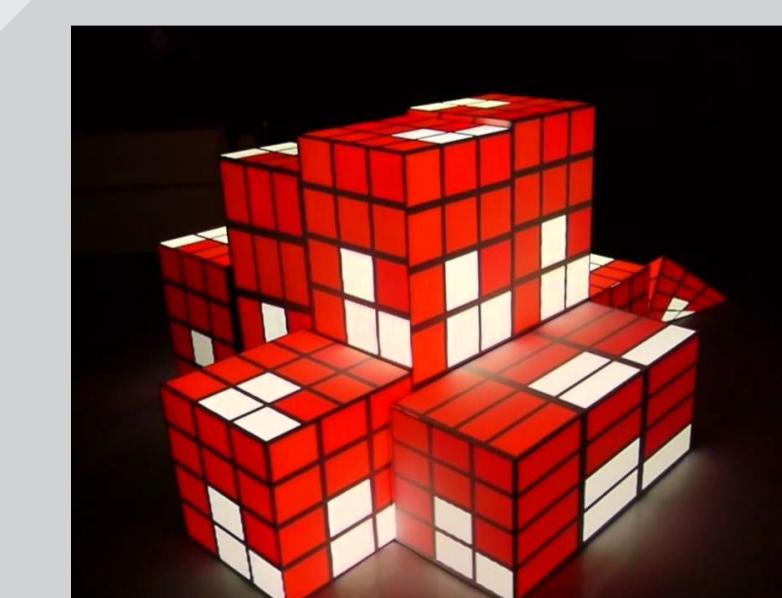
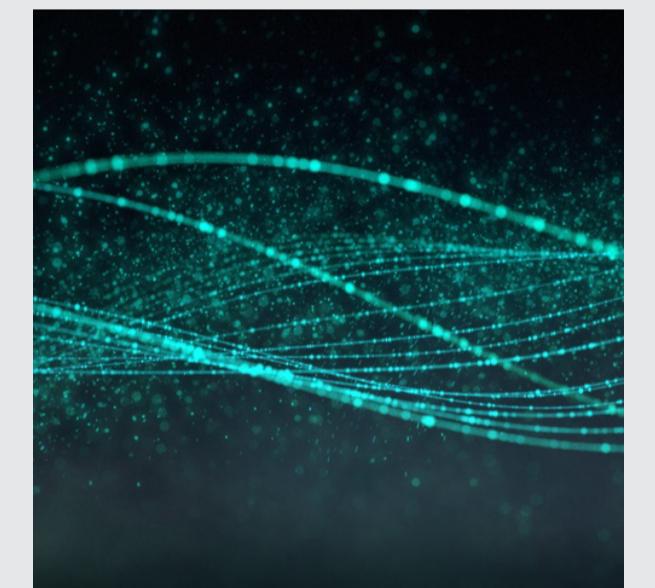
Adobe After Effects [6] is a creative compositing software package used for creating motion graphics and visual effects. It is also used in the post-production of film and television.

User Scenario



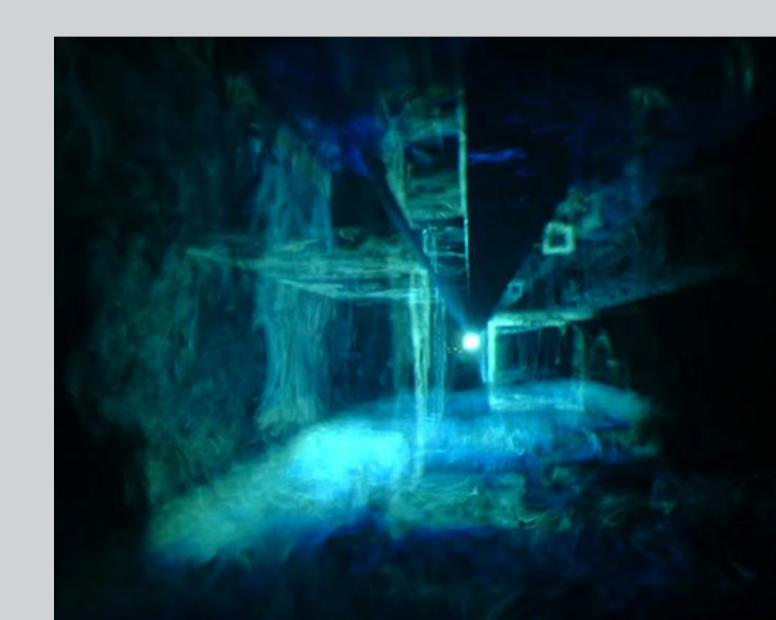
Creative Coding

Creative coding is the creation of high-tech interactive digital artworks. The creative coding philosophy is also about how to make programming and computer technology more accessible to artists and designers. Products of creative coding include art installations, interactive video and large-scale public projections. It translates the world of computers and code to everyday experience with an active community.



A: Social Media

The API accesses live text from trending topics such as '#SARI' and obtains profile pictures.



C: Adobe After Effects

The visual content creation tool produces media to be mapped onto the installation.



D: Projector

The projector takes its input from the projection mapping tool.

DynaMapper
SocialMedia TouchDesigner
GenerativeArt Ipmt openFrameworks YouTube VPT UnderProjectionMapping
CreativeCoding Resolume AdobeAfterEffects
ProjectionMapping GrandVJ
Twitter MadMapper

References

- [1] Projection Mapping <<http://projection-mapping.org/whatis/>>
- [2] MadMapper <<http://www.madmapper.com/>>
- [3] Syphon <<http://syphon.v002.info/>>
- [4] Processing <<http://processing.org/>>
- [5] Twitter API <<https://dev.twitter.com/docs/api/1.1/>>
- [6] Adobe After Effects <<http://www.adobe.com/ie/products/aftereffects.html/>>