TBD Cool Title




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Group 3

Project Concept & Motivation

Concept:

Project Light, Images & Video on 3D objects

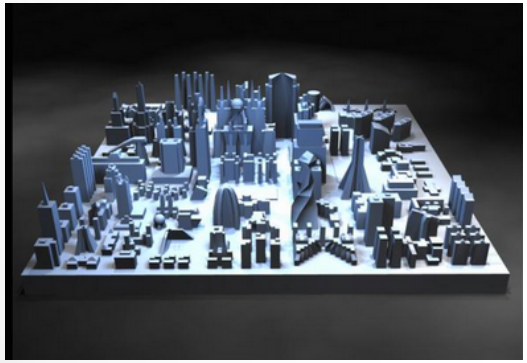
Aim to create an android api for developers

Motivation:

Carnegie Mellon spends $140K annually on ink for the architecture department.

Goal: Decrease this number with the purchasing of a couple of projectors and a table.

Other Applications :



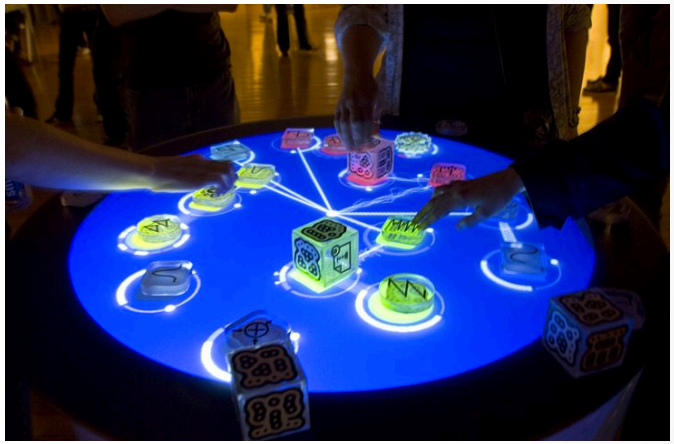
3D Modeling

Board Games

Instruments

Competitive Analysis

Zebra Imaging



React Table

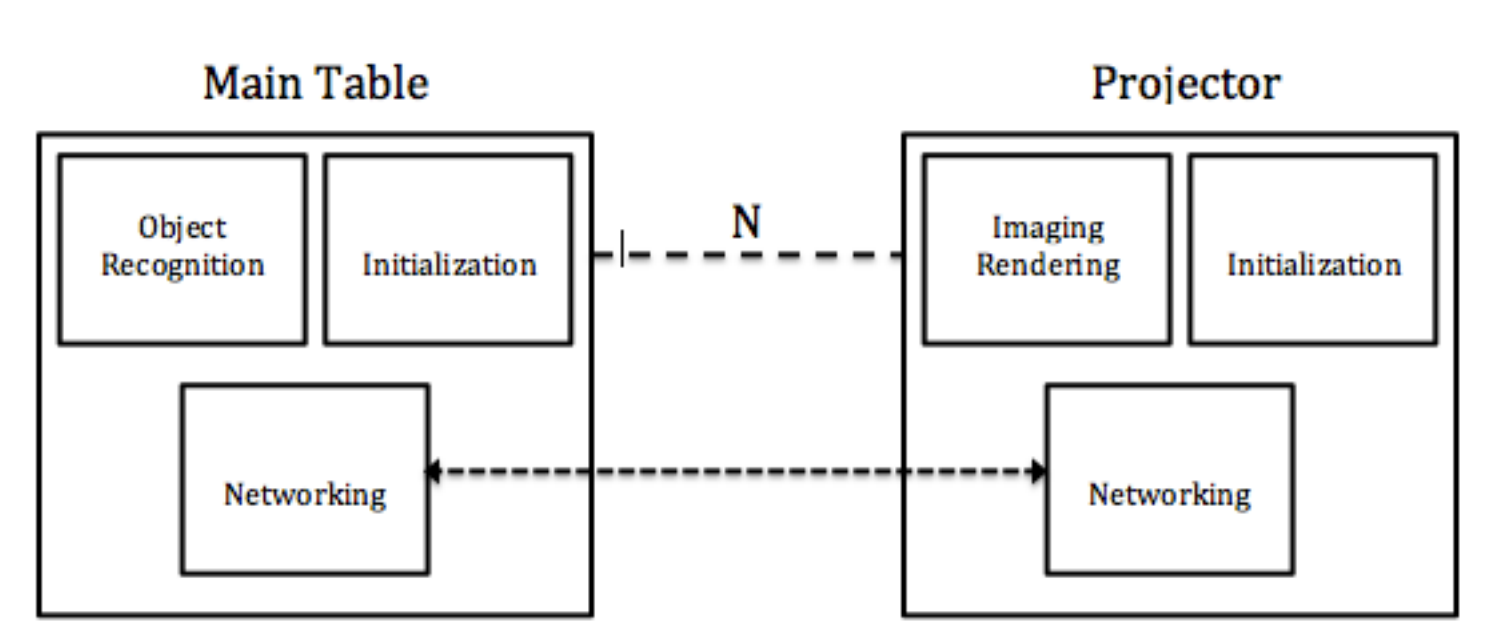
Requirements

- Displays correct and accurate image on objects independent of the number of projectors or the angles are which the projectors are placed around the table
- Package our entire product in a single suitcase for portability
- Synchronize the system, when setting up, in under 10 seconds, re-render images, when needed, in under a second
- Works under all lighting conditions

Technical Specifications

- Hardware Components
  - 2-3 Pico Projectors
  - 2-3 Odroid-U's (similar to Raspberry Pi)
- Software Components
  - OpenCV
  - OpenGL

Architecture



Anticipated Risks & Mitigations Strategies

- Risk #1 – Image projection doesn't display precisely on 3D objects, causing them to look distorted.
- Risk #2 – Doesn't work in all lighting conditions
- Risk #3 – Long Rendering Time