

Rock Your Page

A Chrome Extension Makes Your Webpage More Controlled

WANG Yue LUO Xuan LI Zhi

Department of Computer Science
Hong Kong University of Science and Technology

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Rock Your Page: Features Overview

Three Components:

- ▶ Page Sizer: adjust size of contents in web pages based on distance between your face and screen automatically.
- ▶ Page Rotater: map your 2D web page into 3D scene, multiple pages projection is also supported.
- ▶ Page Rocker: a small game which let your web page dance with music.



Figure : Overview of Components



Rock Your Page: Prototype

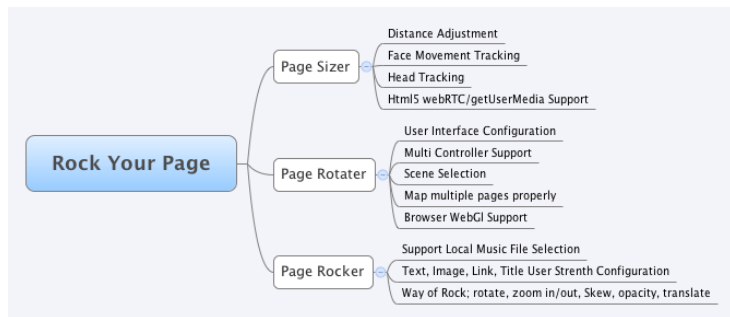


Figure : Prototype Design



Technical Overview: Chrome Extension Development

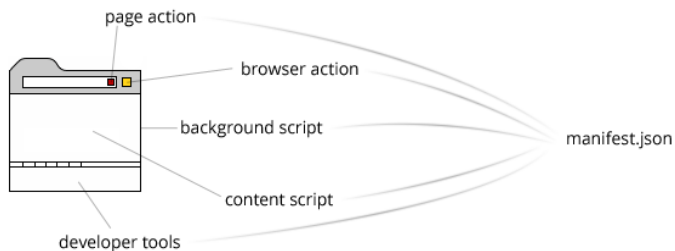


Figure : Architecture of Chrome Extension



Technical Details: Page Sizer

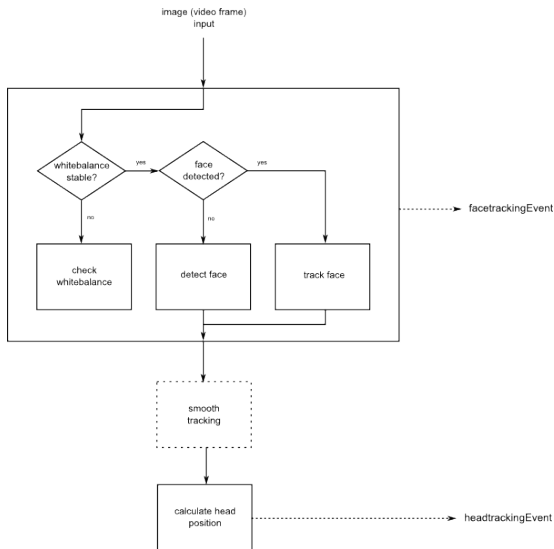


Figure : Face Detection in JavaScript



Technical Details: Page Sizer

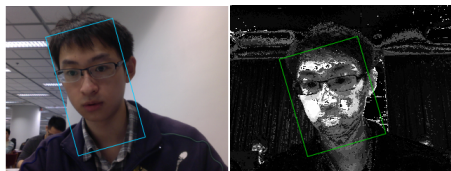


Figure : Realtime Face Detection Using Web Camera

Which element in web page should be sized?

- ▶ p,a,h1,h2,h3,h4,h5,h6,code,span,img,pre

How should we determine the zoom amp?

$$zoom_value = (face_width/video_width)/(face_init_width/video_init_width)$$



Technical Details: Page Rotater

One single web page mapped into 3D world.

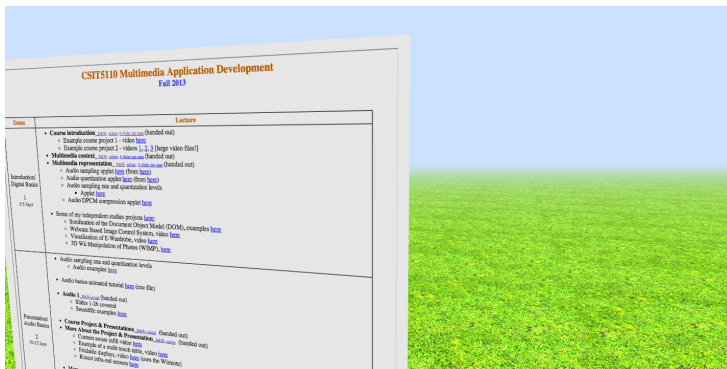


Figure : One single Webpage Mapped to Three-Dimension Scene



Technical Details: Page Rotater

Map one or several pages into 3D world.

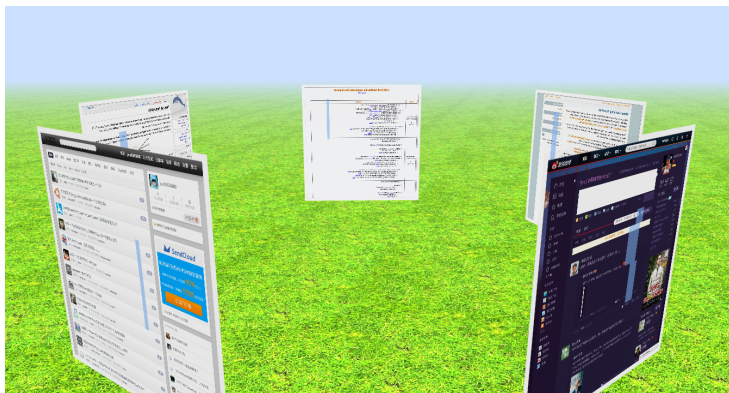


Figure : One single Webpage Mapped to Three-Dimension Scene



Technical Details: Page Rotater

How we could combine the current webpage with a 3-D Scene.



Figure : Map a webpage to a 3D scene

So even in 3D world we can interact with our pages individually without problem.



Technical Details: Page Rotater

When there n pages, how to set their position and rotation in 3D scene.

1. calculate the angle for the i th webpage: $angle = \pi * 2 * i / n$
2. The position of i th webpage: $Position_x = radius * \sin(angle)$ and $Position_z = radius * \cos(angle)$
3. The rotation of i th webpage: $Vector(0, angle, 0)$



Technical Details: Page Rocker

HTML5 Web Audio Context:

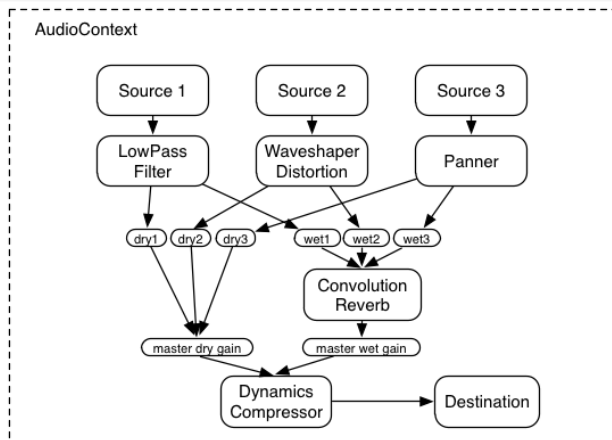


Figure : Web Audio Context

