

Spatial memory, embodied thinking, computer vision
projection application

or

Exploring cognition and interaction in a spatial and
physicalised computer environment.

or

A system for exploring haptic and spatial interaction

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Acknowledgements

Thanks to my family, Florent, Chudleigh dwellers, Jamie ...

Abstract

This project...

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Chapter 1

Introduction

Chapter 2

Background

The motivation for this project stems in part from a feeling of frustration in how working on computers can often be a constricted affair and a pondering over how we might expand the *keyboard-mouse-monitor* model to improve the utility of computers regarding our own perceptive abilities. How might a spatial and more *haptic* environment for interaction create an improved space for thinking with computers as well as our physical health.

2.1 Definitions

1. Computing
2. keyboard-mouse-monitor model (kmm model) (?)

2.2 Original ideas with exocortexes; Externalised memory and organisational systems

1. Org mode and nataniev ecosystem

2.3 Dynamicland

One of my original points of reference was *Dynamicland*, a research project in Oakland, USA. The aim of the project is to implement a new more powerful and accessible model of computing.

In Oakland, we built the first full-scale realization of the vision, inviting thousands of people into our space to collaborate. Together, these artists, scientists, teachers, students, programmers, and non-programmers created hundreds of projects that would have been impossible anywhere else. – Dynamicland.org

Dynamicland is a communal computer where the building is the computer (ENIAC). Programs are embodied in the room on pieces of colour-coded paper. The programs are recognised via the codes and their code, stored in a database is then run, it can also *read* code

using OCR but generally the code is there symbolically. Projectors on the ceiling transform the paper and workbenches into whatever the programmer decides. This relatively simple model makes for an exciting new ecosystem for collaborative computing and expressive programming. Victor, highlights his ideas for the progression of computing and interaction in a series of talks (available online) and on his website. In his talk "Seeing Spaces" he talks of a new kind of maker-space which allow makers to see across time and possibilities. *Dynamicland* offers a computational medium which allows for full use of the human senses for the exploration with of "humane representation[s] of thought". [1]



Figure 2.1: RealtalkOS, the operating system of Dynamicland

Dynamicland was the inspiration for the main physical and technical model for this project, an *augmented* workspace either on the floor or a table which is projected onto. A camera/s pointing down onto the projection space is the sensor for detecting interaction, with the projector as the actuator. This model can be seen in the Figure 2.2 .

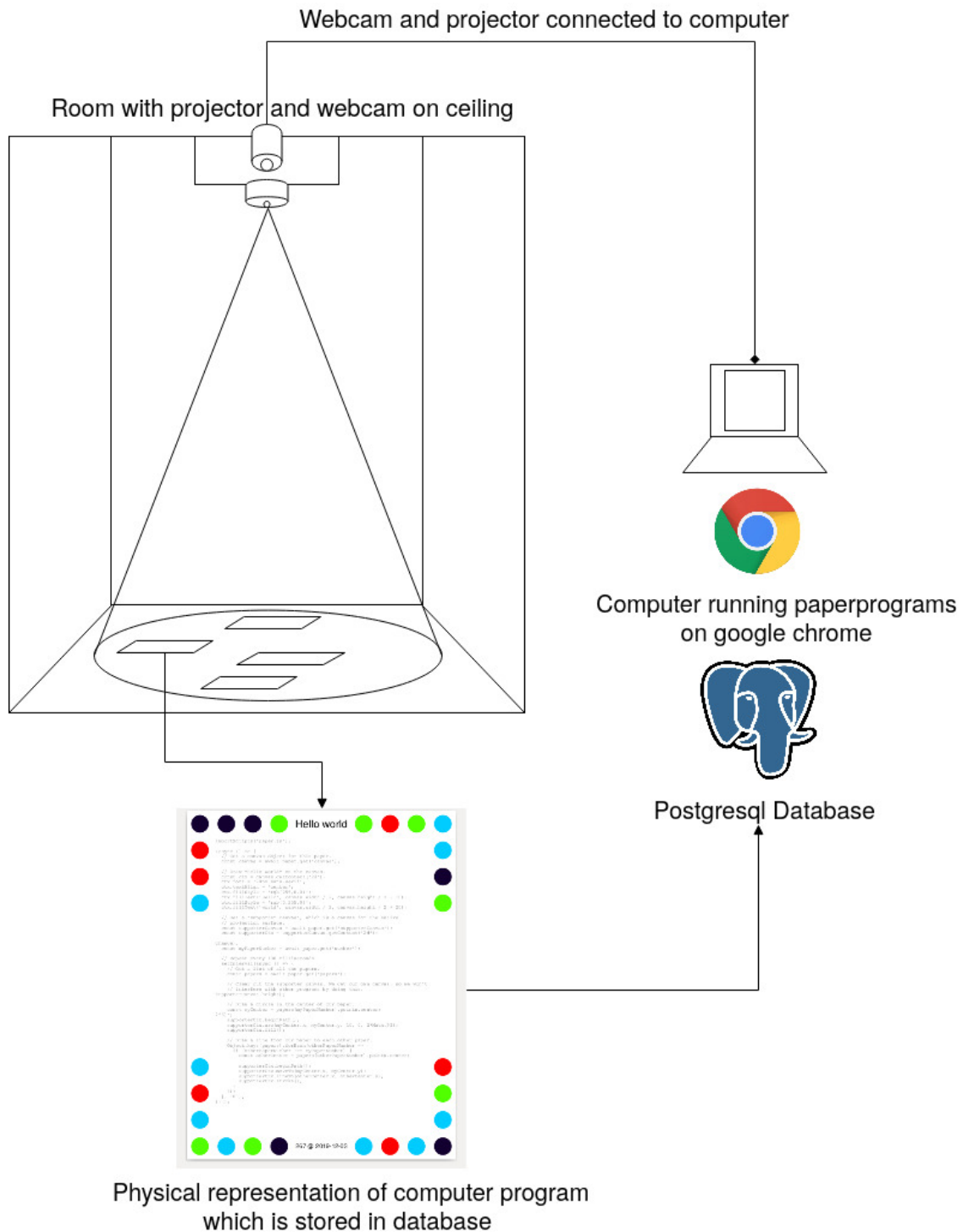


Figure 2.2: The initial physical schema, using *Paperprograms*, a browser-based partial clone of Dynamicland

2.4 Paper programs - open source

2.5 Sage digital research

2.6 Design of everyday things?

2.7 Nielsen: augmenting ltm and using ai to augment human-i

2.8 mental and physical health implications of contemporary computing ? Are they really quite minor?

2.9 Computational creativity?

1. Open source
2. alex mclean thesis
- 3.

Chapter 3

Specification and context

Chapter 4

Project in depth

Chapter 5

Creative process

Chapter 6

Debugging and problem solving

Chapter 7

Evaluation and Conclusions

Bibliography

- [1] B. Victor and A. Kay, “Dynamicland,” 2014, <https://dynamicland.org>.

Chapter 8

Appendix