Electronics and Computer Science

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Open-Source Stereo Video Camera System and Software Implementation for Virtual Reality (VR) Lifelogging and Content Creation

Project supervisor: Tom Blount

Second examiner: <2nd Examiner>

A project progress report submitted for the award of

<MEng Electrical and Electronics Engineering>

Abstract

In the realm of virtual reality (VR) and lifelogging, this project endeavors to overcome barriers of exclusivity and cost by developing an open-source, low-cost, and modular stereo video camera system. Designed to clip onto spectacle frames, this system integrates lightweight cameras and a microphone with the Raspberry Pi Pico microcontroller. It offers efficient stereoscopic (3D) video capture and immersive surround sound recording. Complementing the hardware, the project entails the development of lifelogging VR software using the Godot game engine. This includes a side-by-side (SBS) video player and intelligent metadata auto-tagging through scene and object detection. The primary objective is to democratize VR content creation, making it accessible to a broad audience, from VR enthusiasts to content creators, encouraging innovation in VR and lifelogging. Challenges, such as technical complexities and power management, are addressed through rigorous prototyping and optimization, ensuring project success and fostering inclusivity, innovation, and the advancement of VR content creation technology in the field of lifelogging.

Abstract should be written last according to what u wrote to reflect rest of document, progress report abstract is different than end project report abstract

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Typical structure is like inverted pyramid)

- Introduction (problem statement, scope, goals)

- Background of existing technologies (can separate/structure however I want), and its considerations (where most reference comes from are research, academic papers)

dont need to be exactly like what im doing, separate it for example (lifelogging and virtual reality), and talk about how ur design is combination of both on next section

- Design, who its for, what, why? (Can be moscow requirement)

Circuit diagram, codes when its existing in report, acquisition, budget and cost analysis.

Make sure all diagrams/pictures are related to paragraph its in. Dont need to be my images/pictures for reference, but make sure you got the rights for it.

(usually larger and more important one)

- Project management, how u manage time (gantt chart), risk assessment, how do u plan of next half of project.

max 3000 words (not including references)

if enough space

-conclusion of what i do and what i do next

content are more important than heading names

# Project Goals

# Background and report of literature search

12 pt text for main body

# Report on Technical Progress

12 pt text for main body

# Plan of remaining work

12 pt text for main body

References