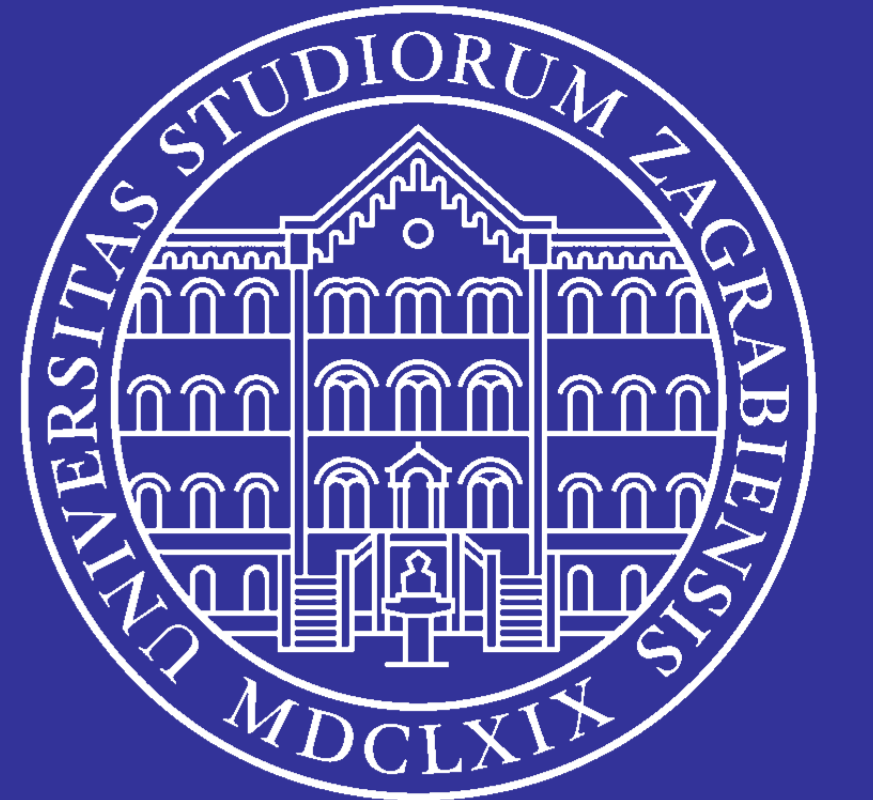


Real-Time Augmented Reality System for Tracking Objects in Performing Arts



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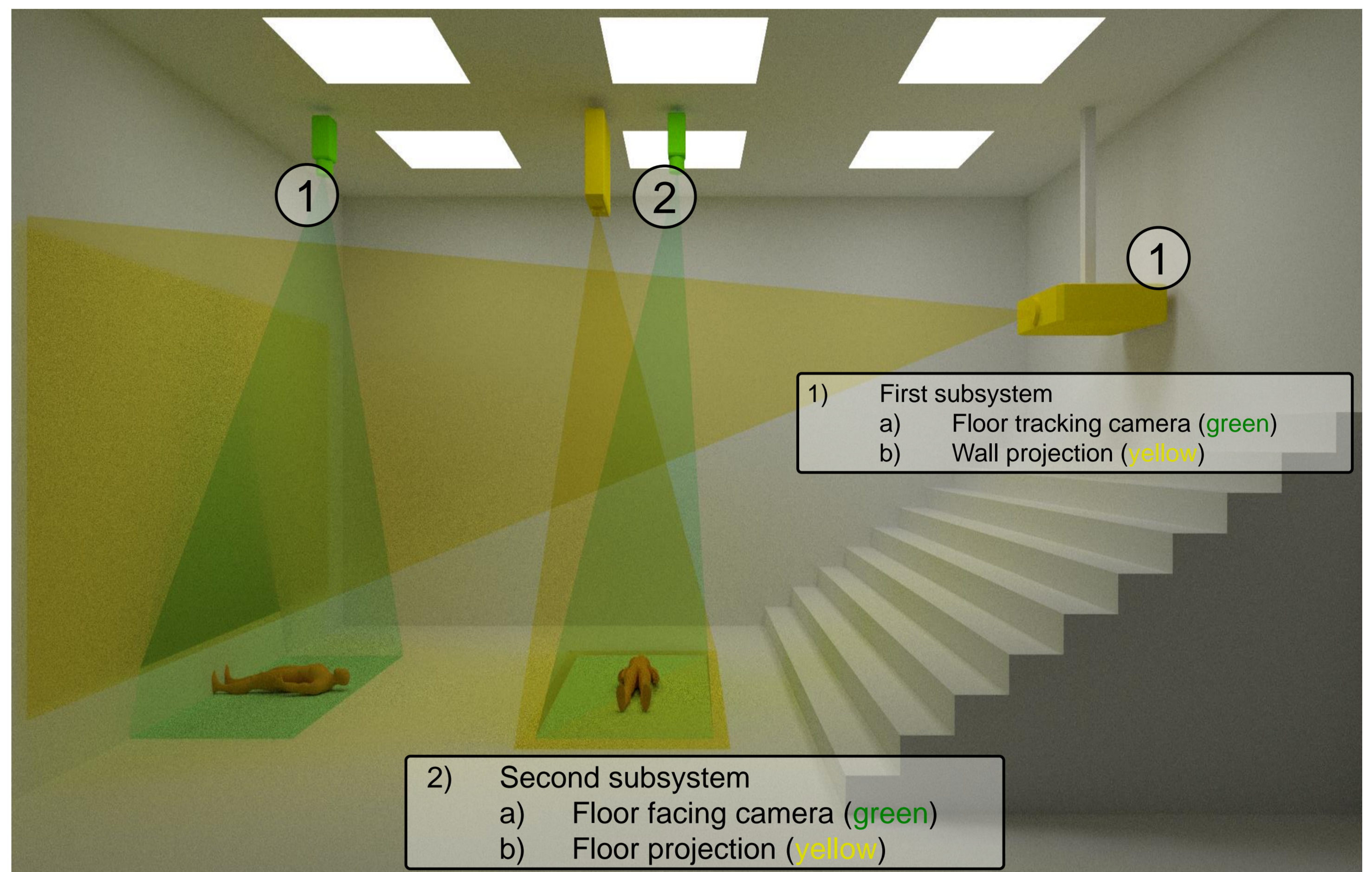
1. Introduction

Augmented reality is getting more popular every day and its usage can be seen in many different scenarios. The main idea is to enhance person's perception of reality. World of performing arts is an ideal environment for usage of augmented reality systems because of its variety and no strict limits which allows various techniques to be tried out and used.

2. Problem Description

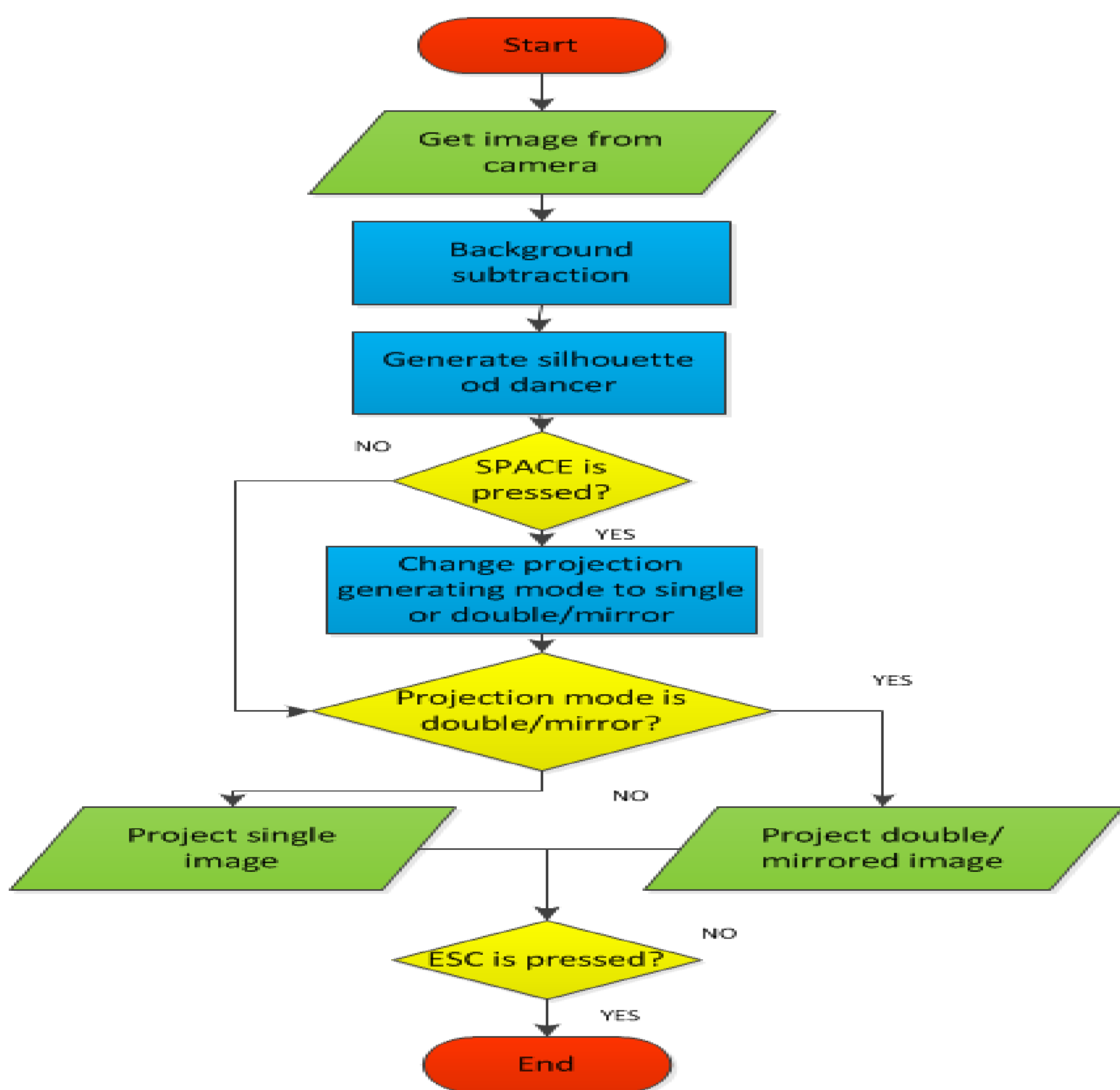
The main idea of this system is to enhance the visual experience of the audience during the performance of modern dance. Three problems had to be solved in each part of the system: tracking of the dancers using video camera, generation of the desired projection image and projecting the image on the desired area.

3. System Layout

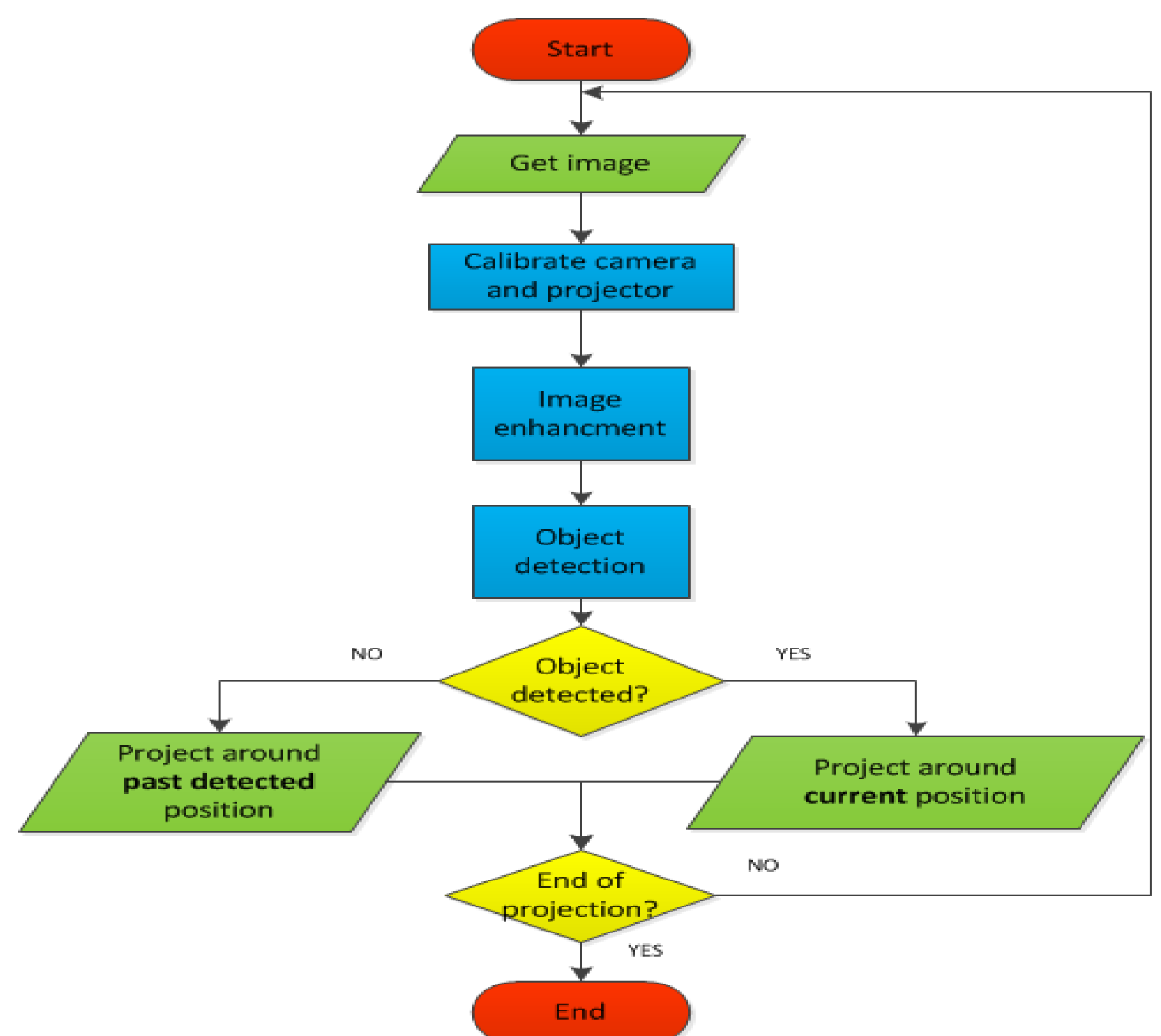


4. Methods

For the first effect location of the dancer was determined using background subtraction methods from which the silhouette was then generated.



For the second effects it was necessary to calibrate the camera and projector and after that the location of the dancer was determined and the projected image was generated.



5. Results



The First Effect (The First Subsystem)



The Second Effect (The Second Subsystem)