

## MASTER THESIS / PRATICAL PROGRAMMING TASK

# SMART GLASSES FOR BINOCULAR VISION

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### Description

Monocular vision is an eyesight defect, which may be because of different eye problems like eyes are not aligned with each other (Strabismus). The main problem with monocular vision is depth analysis, which can lead to accidents. We are working on a solution with smart glasses to provide binocular vision to the patient. The user can have binocular vision with the help of smart glasses.

Working of Smart Glasses: These glasses have a sensor, which can detect the movement of the normal eye. The camera on the smart glasses should take the picture according to the prediction of correct movement of the affected eye. This picture will display on the affected side of the eye with the help of smart glasses. In this way, we can provide binocular vision to people with monocular vision defect.

### Task:

- Describe patient-specific parameters needed to make a simulation.

You have to write code for:

- Prediction of incorrect movement of the affected eye with respect to the normal eye.
- Prediction of correct movement of the affected eye with respect to normal eye.
- Focus the camera according to prediction of correct movement of the affected eye and cover the details according to it.

Our further idea is to show this picture to the affected eye.

### Required Skills:

- Knowledge in programming (C/C++, Java)
- Knowledge in software engineering and algorithms