Augmented Reality:
HoloCube for assisted solving of Rubik's Cube

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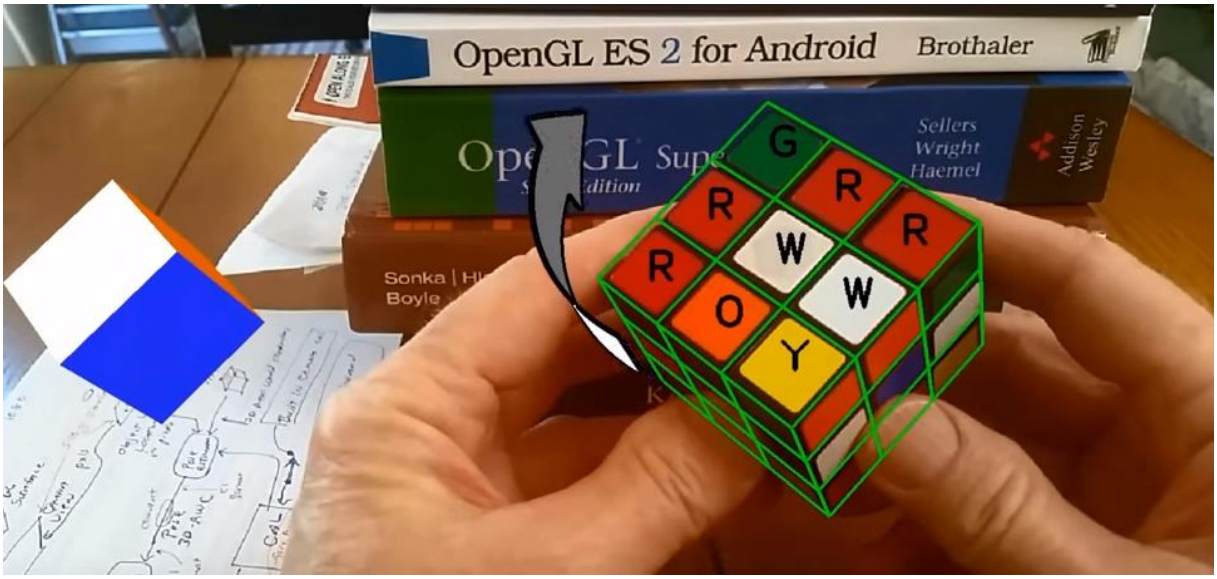
Augmented reality (AR) is a rapidly growing technical domain with potential for application in a wide range of fields. In contrast to Virtual reality (VR), AR captures reality as part of the view and adds additional layers of information. The additional layers have the potential to enable optimization of problem solving using visual aid, potentially saving time and money.

The famous puzzle Rubik's cube is a perfect example of such a problem, where the user is required to solve the puzzle by rotating parts of the cube in the correct direction. This can be done in a series of steps using existing algorithms for solving arbitrary cubes. Using the Microsoft HoloLens, the solution steps can be displayed directly on the cube itself, by overlapping holograms, turning anyone into a master of Rubik's cube!



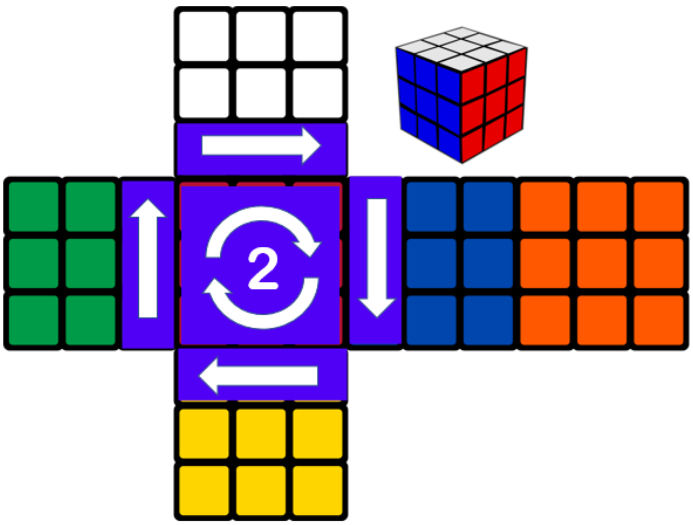
The result of the project will be evaluated by comparing the performance of a group of persons of varying experience when solving a Rubik's cube, with and without the aid of the HoloLens. The potential performance improvements can then be translated into money savings, thus motivating future business cases for the concept.

Your task in the project will be to develop an AR assistant in Hololens for solving Rubik's Cube, in cooperation with Cybercom's AR team. The scope of the project includes:

- Detecting and separating a Rubik's cube from all other objects of a camera view
- The design and implementation of the visual overlay of the cube, including both immediate solving steps, as well as the current progress of the solution.
- Implementing a solver for the Rubik's cube and displaying the solution steps in an intuitive way to the user
- Enabling backtracking to previous solution steps if the user made a mistake

Sounds interesting? Do you have any suggestions of your own? Let us know!

In this project, you will practice competence such as Image Recognition using OpenCV, Unity, C#, HoloLens, Algorithms implementation



Next Step?

To secure that the project is yours please send a mail or call me (Gabriel Ibanez), I will be willing to share with you further details including booking a first meeting with your project supervisor:

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You are most welcome to join us at ***Cybercom Lindholmen*** (***Lindholmspiren 3A, 417 56 Göteborg)*** on Monday the 23th October at 17:00**.** We will show you then how we work, run a demo of our current ongoing-projects and let you meet the rest of the Innovation Zone's team so that you can feel at home from day one.

There will be pizza and opportunity to meet your project supervisor to discuss further about your project. Welcome!

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In the several PDFs with ideas presented by Cybercom you will find several possibilities for thesis and practice at Cybercom Göteborg.

Since Cybercom is an innovative IT consulting company we have a wide range of clients in different sectors and that means we are always willing to explore new technologies in a large variety of different domains such as Telecom, Automotive, IoT, Machine Learning, Virtual & Augmented Reality, Cloud and Big Data, just to name a few.

The collection of ideas that we present to you intend to reflect that diversity, we at Cybercom hope that you can find them inspiring. May your idea for project not be among our proposals? Let us hear about it, we will always welcome your own ideas and proactivity.

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Innovation Zone's blog:
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Below you can find some examples of thesis and practice handled at Cybercom in the past few years, they might be inspiring. Follow the QR codes to read further details about the them.