Competitive cycling over 5G

Introduction

- Now a days, cycling has become more popular among almost all the people without any age limit. However, due to heavy traffic and risks in outdoor cycling, it has been moved into virtual platform. At present, this is done only as individuals. We are trying to introduce new experience with competitive cycling among cyclers who are at different geographic locations. At the same time, user's competition statics and health details can be visualized through a web or mobile application.

Our approach

- Whole task is divided into few subtasks
    - Hosting the videos in cloud-based server and streaming them through 5G.
    - Experience of competition
        - Process the video such that one competitor can see the other one.
        - 360-degree immersive vision
        - User dashboard for previewing statics of competitors
    - Monitoring user health statics
        - Heart rate
        - Calories burnt

How we intend to deliver

- For hosting the videos, we hope to use a cloud server due to limitations of processing power in a local server.
- Based on the inputs of the gyroscope and accelerometer, relative position between competitors is calculated. Those data will be used to show the competitors avatar.
- User dashboard previews the data related to competition such as how much distance traveled, recorded top speed, past competition details, Analysis of competition statics for a user defined period.
- Another part of the dashboard is allocated to preview data related to health such as variation of the heart rate, calories burnt during a competition or for a user defined period.
- Video is streamed according to cycler's head orientation. For this, view optimizing techniques will be used. It will allow us to decrease the latency and ensure smooth flow of the video.