Functional requirements

Load digraph from file into space

Change graph view and zoom

Set criteria for force direction

Edit graph using hand gestures?

Sync graph with external display

Non-functional requirements

High performance - Real time communication between view and external display

Scalability – System must be robust and modular, allowing easy addition of additional features

Reliability – Ability to track hand movements and capture gestures accurately and adjust graph accordingly

Security – Must not inadvertently put user’s information at risk through vulnerabilities

Implementation details

Sigma graph modelling library (java script)

Create cross platform application

Native cross platforms application (React-Native/Other)

Design patterns: Observer, command

3JS for creation of 3D space

Google cardboard for immersive graph rendering

Multithread.js to run multiple processes for performance optimization (faster sync & graph generation)

External Interface Requirements

Interface Requirements

The main user interface will be in the form of a virtual reality space. Through this space, the user will be able to make various interactions with the system by means of hand gestures. The application itself will have a graphical user interface which the user can make use of in order to alter various configurations of the application.

Software requirements

There are multiple software packages and libraries which will be used within the system in order to implement the required functionality. (Mention a list)The application will need to be compatible with the Google Android operation system, as well the Apple iOS operating system.

Hardware Requirements

The system will require the presence of a virtual reality device in order to allow for a virtual reality space to be displayed. The application will be deployed on a mobile phone. As such, the mobile device should be able to meet the minimum requirements in order to run the virtual reality application.

Communication Requirements

There are various components of the system which will have to communicate with one another in order for the system to provide its required functionality. (Mention a list of libraries and how they would need to communicate)