

# Supporting unemployed with VR: Virtual Internship project

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## 1. Introduction

In the Virtual Internship project, we are investigating whether the use of Virtual, Augmented and Mixed Reality with gaming technology can motivate and inform young job seekers on their way to work. The Virtual / Mixed Reality experience allows the user to train in unfamiliar situations, such as job interview, typical tasks at different workplaces and interaction with others in a safe setting, thus mastering the corresponding real-world situation. Through the simulation, the job seekers can immerse into different workplaces, explore different locations, try out typical tasks, collect points and get feedback on their performance. The project completed the stages of needs assessment, conceptual development, development of prototypes for 'low-end' devices (such as Cardboard) and evaluation of these prototypes.

Applications for altogether three industries (health care, office/startup and fish farming) have been developed. The prototypes have been evaluated among young job seekers and, career counsellors.

During spring-autumn 2018, prototypes for 'high-end' devices (such as HTC Vive and HoloLens) are being developed. In addition, a separate app simulating job interview with 360 videos for Cardboard/Gear VR is under production. We conducted several intermediary evaluations of the prototypes at different stages of development, collecting data both on the usability of the apps and feedback on the concept. The participants included young job seekers, career counsellors and counsellor students, employees at the Norwegian Labour and Welfare Administration, researchers in the field of Technology-Enhanced Learning, and experts from partnering industry companies. The final evaluation of the prototypes is planned for October 2018. The project has been shown on Norwegian TV<sup>1</sup>.

We used questionnaires, focus groups and interviews to collect the data. Both job seekers and counsellors have been very positive to the concept. The majority of testers agreed or strongly agreed that such apps should be available for job seekers and as a part of career guidance at schools, could give a better confidence in performing work tasks and a better understanding of different professions. The majority of testers preferred the 'high-level' VR version. Cardboard versions were found less user friendly, but could according to the testers be useful in certain contexts (e.g. at home). There have been divided views on the use of AR/HoloLens. Respondents wanted primarily to use the simulations for exploring different professions and workplaces.

This demonstration presents one of the applications that is being developed in the current stage of the Virtual Internship project – FisheryVR, which was preferred by most of the testers. The application is a VR simulator of two industries and two corresponding workplaces: fish farming and fish processing.

## 2. Virtual Internship: FisheryVR Application

The FisheryVR application simulates an area of a typical Norwegian fjord, where fish farming facilities and a fish processing facility are located. The fish farming facilities are located on water and include six large

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<sup>1</sup> <https://www.vgtv.no/video/160847/nav-tester-virtual-reality-for-unge-jobbsoekere>

fish cages, a control and feeding station and a boat to navigate between the task locations and between the farming and processing facilities.

The tasks in the fish farming part include (a) maintenance checks of ropes and knots on the cages and (b) remote fish feeding and supervision being at the control station. The fish processing facility is located on the shore, and the user can drive the boat and moor at a nearby pier. The tasks in the fish processing facility include (c) fish sorting, (d) packing and (e) fillet cutting. Before entering the facility building the user goes through a health-and-safety area to put on the uniform and wash hands.

Each task in the application is accompanied by a 360-degree video filmed at the real workplaces. The videos feature either an introduction to a specific task or simply perform the function of better reflecting the real working environment.

At any time, the user can access a description of each task and get feedback on his/her performance. This information is accessible via a virtual tablet attached to the user's belt. Each task is divided into activities that need to be performed to complete it. The user can collect different types of points for each activity. For example, the fillet cutting task (Fig. 1) consists of the following activities: washing hands upon entering the facility, washing shoes before entering the fillet area, cutting 20 fillet pieces, cutting fillet pieces correctly, and washing shoes on the way out of the fillet area. The app gives different types of points. These types are specific to different industry branches and derived from job announcements as the most wanted skills in the corresponding industries. In the mentioned example of fillet cutting, the user can earn 'skilfulness' and 'hands-on ability' types of points for cutting all 20 fillet pieces. At the same time, the user can earn 'accuracy' points for cutting the fillet pieces correctly.



**Figure 1.** Fillet cutting task: first-person view in debug mode (left) and third-person view of the user (right)

The project results are relevant for various stakeholders. We contribute to research on using VR/MR for workplace training and career guidance for vulnerable groups, such as young unemployed. The industries can benefit by getting more informed and motivated job applicants. Unemployment offices and schools will receive an additional tool for carrier guidance. The young unemployed, many of whom suffer from dyslexia, language difficulties, anxiety and low self-esteem, will be able to explore new workplaces and train on unfamiliar situations in a visual, engaging and immersive environment, in a safe setting and their own pace. While there have been projects exploring workplace training in VR/MR, these have been mostly targeting established professionals and older demographics. Our approach of using immersive technologies to motivate, empower and inform young job seekers, giving them a 'job taste' of different professions, is therefore rather unique. In addition, simulation of the working tasks and environment in the fish farming and processing industry is hardly explored

At the demonstration stand, the visitors will be able to test the FisheryVR application and perform all the available tasks using a MR headset Samsung Odyssey. A video walk-through the application is available online at <https://www.youtube.com/watch?v=Ry--5VdjTUA>.

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