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Widen People’s Career Opportunities with AR Technology

A Thesis submitted in partial fulfillment of the requirements for the degree of Master of Fine Arts in Visual Communication Design

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Abstract

According to some existing research, a lot of people regret about their career selection due to the lack of sufficient knowledge and research when they made the decisions. By exploring the reasons, process, and factors that influence people’s decision-making, I designed an mobile application that help people find more career opportunities beyond their own living experience by leveraging AR recognition technology, and provided a platform for people to get sufficient information so that they could make a better choice for their future career.

Background

To some extent, we can say that career selection has one of the biggest impacts on people’s lifetime happiness. But do people know how many career options they have when they start to make a decision? Do people know exactly about the routine work of a job when they just hear the name of the job? A survey conducted by an investment company in 2010 showed that 9 out of 10 people aged between 21-65 regret rushing their career choice. 20% of students currently enrolled at university say they would have chosen a different course if given the chance, with 18% saying they regret their choice of degree1.

Problem Definition

Lots of people don’t know what kind of major or profession will be the right choice for their future career. Young students don’t have enough knowledge and insights to choose the most appropriate major and profession for themselves. Lots of people regret about their career choice after stepping into the workplace. But it’s fairly difficult to switch career after you’ve spent lots of time and money on your original major.

What are the Reasons

When people are making decisions for their future major and profession, there are several important factors that influence their decisions.

A career choice is specially made for a specific person, it should match one’s interests, personality and strengths, so personal satisfaction is one of the most important factors when making the decision.

The purpose of choosing a major or a profession is deciding people’s life-time job, so the information about the job market is also very important, such as employment opportunities and income of a profession.

“A survey of high school seniors' career choices: implications for allied health”2 is a research study conducted to determine what factors influence high school seniors when making decisions related to future careers and college education. The results here and in other studies point to lack of knowledge rather than lack of interest as the leading cause of enrollment vacancies in some majors. Another study conducted by the investment company found that 18% of the 1,805 respondents cite a lack of initial research as the main cause of their disappointment. Over half of the 3,000 students that responded to a GTI Media survey said their parents tried to exert influence over their choice of career or course.

According to the survey results, the students’ career choices are restricted by their own knowledge and their parents’ experience. The main cause of regrets in their career selection is lack of information, or misunderstanding about the careers. There could be some big gaps between the reality and people’s imagination regarding career.

The first gap occurs at the high school stage — that’s the actual beginning of people’s careers. At this stage, people need to make a decision on which major to learn after entering college. But there’s a big gap between people’s imagination of the field they are going to study and the actual work they can get in the future. Students don’t have solid knowledge about what they are going to learn before they select a major, and how many career options they will have after graduation.

The second gap occurs when the students start to apply jobs. There’s a big gap between people’s imagination of a job based on the titles they heard and the actual routine work of that job. As a result, there are so many people choose to change their career direction after several years of work, but switching careers is a huge cost and can be fairly difficult.

For the these cases above, solid knowledge and reliable information are needed for people to make wiser career choices.

**How to Improve**

Knowing the reasons that cause regrets in career selection, how could people make better choices?

First of all, I did a research to explore the general process of people making their career choices. The commonly used steps are concluded in “The Career Planning Process”\(^3\). According to the research results, I also concluded the journey of making career choices along one’s life in Image (1). At the beginning, people need to know themselves better, including the interests, personality, talent of themselves, so that people could know what kind of professions is the best match for themselves. There are some existing tools like personality tests and career match tests helping people with exploring themselves.


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After internal exploration, people need to start finding information externally about the professions. They need to find solid knowledge to fill the gaps between their imagination about the professions and the reality, so that they won’t just choose a career based on a name they heard and regret later in their life. There are tools like career games helping people experience the routine tasks of different kinds of professions.

Besides, having quantitative data and analysis based on statistics could help know the key information about job market. People can know the future development, industry trends, average income and other important things about the professions that they are interested in.

In addition to the quantitative information, people also need to know more qualitative details about the professions, such as the skill requirements, the learning path, true stories about the professionists, as well as some “disappointing facts” or “boring facts” about each profession, so that people can confirm that their passion about a profession is strong enough and their understanding about a profession are not too superficial.

People’s knowledge about the existing professions in the world is restricted by their own experience, lots of people miss some potential career opportunities just because of not knowing the existence of some interesting professions. So it could be a great help if people can leverage any tools to know more career choices beyond their own life and experience.

**Introduction of AR Technology**

Augmented reality (AR) is an interactive experience of a real-world environment where the objects that reside in the real world are enhanced by computer-generated perceptual information. AR technology is a great tool to connect reality to some information beyond people’s life, so it could be a good way to widen people’s knowledge when they are trying to find an ideal career choice.

In order to help people make better career choices, I designed a mobile application called AR career detector, which accesses and visualizes the most valuable information regarding major, work and career, and help people find more interesting careers and professions by using AR technology.

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AR Career Detector

The target users of AR Career Detector consist of 3 groups of people. First, people start to consider about their future profession and are required to choose a major for their future at high school stage, so the primary user of this application are high school students. There are also lots of people regret about their major and career choice after stepping into college, or even after they started working, they need to find a more ideal profession, and need to know the learning path, so they could be the secondary user group of this app. In addition, there are also many retired people who are interested in starting a second career. They can’t continue doing the work they did before, they need to find something that they are interested in and are able to do based on their skills and interests, but the related information is very hard to find.

The goal of AR Career Detector is helping the target users find the most appropriate profession and give them enough information so that they can take further actions to plan their future career.

The first frustration is that people don’t know how to widen their scope and detect more possibilities beyond their own living experience. This app could help people discover the careers related to any objects around them by using AR recognition technology. The users can detect any scene with phone camera, the objects will be recognized in the scene, and all the related professions will be pulled out from the database. The workflow is demonstrated as the flow chart in Image (2).

*Image (2): Workflow of AR Recognition*
For example, if there’s a camera in the scene, the app will show professions like photographer, photo editor, model, imaging scientist, chip manufacturer, or any other related jobs in the manufacturing line of a camera (See example screens in image 3). In this way, people could find out a lot of interesting professions and majors that they’ve never got a chance to hear of before, and their future career opportunities are widen infinitely rather than just living on the repetitive experience of themselves and their parents.

In addition to the AR recognition, it also provides a visualized database to help people explore more careers based on the connections between related careers. It divides the professions in the database into different categories, such as science, engineering, social service, military, etc. So the users could easily browse the professions based on the categories they are interested in. For example, if the user find “Product Designer” under Art and Design category, they could also see related professions like Interaction Designer, Motion Designer, Production Designer, Sound Designer, etc., they are connected with each other like a network as shown in image 4.
The other function that helps people find more career opportunities is the recommendation system. It is designed based on the personality tests and career matching analysis. If the users fill their personal information (such as hobbies, preferences) in the system, they could get profession recommendation based on the analysis. The users can choose “Like” or “Not Interested” for a matching result, and the matching could be adjusted further after knowing more and more about the user’s preferences.

The AR recognition, visualized database, categories and the recommendation system provide various ways for people to know as many professions as possible based on their interests, and they could create collections for the professions that they like. But how could they narrow down the scope and select the most appropriate and ideal one from the lists?

To solve this problem, this app also provides enough information to help people make the best decision. It shows the most useful and attractive information which makes great influence on people’s career choices. In order to select the most impactful data to show, I did a research to find out what are the factors that influence people’s career choice. The result in “A Systematic
Review of Factors That Influence Youths Career Choices—the Role of Culture\(^5\) shows that people usually consider about internal factors such as personal interests, personality, skills, experience, strength and weakness, external factors including anticipative salary, market demand in the future, employment rate, industry prospect, and qualification requirements of the profession (See image 5).

To help people make a better decision, this app collect data about each profession including salary range, current market demand, future opportunity estimation, location distribution, skill requirements (Image 6). And the most important one, it analyzes whether a profession is suitable for you using the personal information you fill in the system, and provide a matching score for you indicating the matched-degree.

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Image (6): Data about a Career
In addition to these quantitative data, people are also curious about the experience from the professionals, they want to know the routine work, the “negative experience” or “frustrating facts” about a profession. So this app also provide a platform for experience-sharing. People in each industry could share their feelings and tell their stories about their career, such as what kinds of difficulties they may come across during work, which parts of their work do they love the most, and how to plan their career path and improve themselves. In this way, people can learn from other’s experience and get career advices from others. To quantize these kinds of experience and feelings, this app provides the “satisfaction rate” and “work-life balance rate” by the professionists, which could be a great help for people to make decisions on either major selection or career switch (Image 7).

After narrowing the scope down with the information provided, the users could confirm their ideal profession and major. But what should people do for the next step? In order to help people get started and open the door of their future career, this app provides the learning path, list of
relate college programs, and list of related jobs from different companies (Image 8). As a result, the students could easily get access to the schools and programs they are interested in and ask for more information they need.

In addition to these information, this app also create a platform for the students or learners to get access to the professionists in the industry. It has discussion group for each profession, so the users could join the group, post questions, and get resources to learn (Image 9). The college official members could join the groups, answer students’ questions so that they could promote their programs. The experienced people in each industry could also discuss things about their career, tell their career stories and give advices for the freshmen. In this way, the experienced people could solve their career problems, get skills improved in the discussion group, and the freshmen could know more truth about the professions they are interested in and plan their career early on.
In conclusion, the AR Career Detector mobile app helps students find more career opportunities beyond their limited life experience by using AR recognition technology, and provides visualized information which are the most influential for making career choices. Further, it provides a platform for students to get access to the college programs they are interested in, and for the schools to advertise their programs with future students. It also provides a platform for the people in each industry to have discussions about their careers, and for the beginners to get career advices and long-term career plan from an early stage.

In this project, I explored the common journey of making career choices, and found out the most important factors that influence people’s decision-making during the process. Then I tried to solve the problem based on the external factors that influence people’s career choices, such as
widen people’s scope, providing more choices for them by using AR recognition technology, giving them useful information in order to help people have deeper understanding about each profession, so that they could make the decision wisely and prudently, and reduce the chance of regretting afterwards.

References


