【Specification】

【Title of invention】

METHOD, APPARATUS AND COMPUTER-READABLE RECORDING MEDIUM FOR RECOMMENDING CAREER AND JOB PATHS TO ADOLESCENTS AND COLLEGE STUDENTS

【Technical Field】

The present invention relates to a method for recommending careers and job paths to adolescents and college students. Specifically, it involves analyzing the first attribute information of college student members through an artificial intelligence algorithm to generate first sample information and analyzing the second attribute information of working professional members to generate second sample information. Then, after training a career and job recommendation algorithm using the first and second sample information, the third attribute information of adolescents and college students is analyzed through the trained career and job recommendation algorithm to provide personalized career and job recommendations. Additionally, the technology provides a recruitment linkage service for the recommended job roles.

【Background of the Invention】

The biggest concerns of adolescent students are academic and career-related issues. According to statistics released by the National

Statistical Office and the Ministry of Gender Equality and Family, the main concerns of domestic adolescents are jobs (30.2%), studying (29.6%), and appearance (10.9%), in that order. The primary sources for counseling on these concerns are friends and peers (49.1%), parents (28.0%), and self-solving (13.8%). Recently, it has been confirmed that the most important factors for adolescents aged 13-24 when choosing a career are aptitude and interest (ranked 1st), income (ranked 2nd), and job stability (ranked 3rd). These results suggest that the current youth unemployment crisis has had a significant impact, and there is an urgent need for specific career-related assistance through career aptitude tests.

Accordingly, in the education sector, various technologies are being developed to recommend personalized career paths and job roles for students.

As an example, Korean Open Patent 10-2023-0080892 (A System for Department and Career Recommendations Using Cognitive Capacity Games) discloses a technology for recommending suitable departments and careers to participants by measuring their cognitive capacity through a game-type service with various game structures.

However, the aforementioned prior art only discloses a technology that recommends suitable departments and careers to participants based on cognitive capacity information from the results of the game-type service. It does not disclose a technology that analyzes the first attribute information of college student members through artificial intelligence

algorithms to generate first sample information, analyzes the second attribute information of working professional members to generate second sample information, trains a career and job recommendation algorithm using the first and second sample information, and then analyzes the third attribute information of adolescents and college students through the trained algorithm to recommend personalized career paths and job roles. Furthermore, it does not disclose a technology that provides a recruitment linkage service for the recommended job roles. Therefore, there is a growing need for a technology to address this gap.

【Summary of the Invention】

【Problem to be Solved】

The present invention is derived to solve the problems of the existing technologies mentioned above. It analyzes the first attribute information of college student members through an artificial intelligence algorithm to generate first sample information, then analyzes the second attribute information of working professional members to generate second sample information. After training a career and job recommendation algorithm using the first and second sample information, it analyzes the third attribute information of adolescents and college students through the trained career and job recommendation algorithm to recommend personalized career paths and job roles to students. Additionally, it provides a

recruitment linkage service for the recommended job roles. The goal of this invention is to support personalized career exploration for adolescents or college students, enhancing their understanding of career paths and job roles, and helping to alleviate youth unemployment.

National Research and Development Projects Supporting This Invention

Project Unique Number: 2420005750

Project Number: 00468093

Ministry: Ministry of SMEs and Startups

Project Management (Specialized) Institution: Small and Medium Business Technology Information Promotion Agency

Research Program: Startup Growth Technology Development Program

Research Project Title: Research and Development of AI Job Competency Analysis-Based Career Recommendation Algorithm for Southeast Asian Students

Project Performing Institution: EduCanvas Inc.

Research Period: August 1, 2024 - July 31, 2025

【Solution to the Problem】

In a method for recommending career paths and job roles to adolescents and college(university) students, implemented by a computing device comprising one or more processors and one or more memories storing executable instructions in accordance with an embodiment of the present

invention, when receiving real-time the first attribute information registered in a plurality of college student accounts of college student members in a career and job recommendation platform, based on a pre-stored first artificial intelligence algorithm, analyzing the first attribute information to generate first sample information used for recommending career paths and job roles to adolescents and college students, a college student-based sample generation step; during the execution of the college student-based sample generation step, when receiving real-time the second attribute information registered in a plurality of worker accounts of worker members in the career and job recommendation platform, analyzing the second attribute information based on a pre-stored second artificial intelligence algorithm to generate second sample information used for recommending career paths and job roles to adolescents and college students, a worker-based sample generation step; when the generation of the first sample information and the second sample information is completed, after training the pre-stored career and job recommendation algorithm with the first and second sample information, receiving a career and job recommendation request from a student account registered as an adolescent or college student in the career and job recommendation platform, and based on the pre-stored career and job recommendation algorithm, analyzing the third attribute information registered in the student account, generating personalized guide information containing recommended career paths and job

roles for the student account's user, and providing it to the student account, a personalized guide providing step; and when the generation of the personalized guide information is completed, analyzing the correlation between the details in the personalized guide information through the pre-stored employment support service recommendation algorithm to generate employment link service information for the recommended job roles, and providing it to the student account, an employment link information providing step.

The college student-based sample generation step includes a first attribute information receiving step of real-time receiving first attribute information, which includes middle and high school grades, first advancement information, satisfaction with the department entered, expectations about the desired job, and additional course information, registered by college student members in the plurality of college student accounts; a college student trait identification step of identifying first trait information based on MBTI, personality tests, and psychological analysis registered in the plurality of college student accounts during the execution of the first attribute information receiving step; and a first sample information generation step of analyzing the correlation between the middle and high school grades, advancement information, satisfaction with the department entered, expectations about the desired job, additional course information, and first trait information included in the first

attribute information, based on the pre-stored first artificial intelligence algorithm, and generating first sample information based on the analysis results, which reflects the trait of the college student member and job preferences according to their career path.

The pre-stored first artificial intelligence algorithm is an algorithm that analyzes and trains the correlation between the first attribute information, first trait information, and first sample information of other college student members , and trains patterns identified by analyzing the correlations multiple times between the first attribute information, first trait information, and first sample information of other college student members , so that when analyzing the correlation between the first attribute information and first trait information of the college student member, the algorithm generates first sample information based on the trained pattern that reflects the trait of the college student member and job preferences according to their career path.

The worker-based sample generation step includes a second attribute information receiving step of real-time receiving second attribute information, which includes comprehensive grades, second advancement information, self-introduction information, job competency evaluation information, satisfaction with the workplace, and job satisfaction information, registered by worker members in the plurality of worker

accounts during the execution of the college student-based sample generation step; a worker trait identification step of identifying second trait information based on MBTI, personality tests, and psychological analysis registered in the plurality of worker accounts; and a second sample information generation step of analyzing the correlation between the comprehensive grades, second advancement information, self-introduction information, job competency evaluation information, satisfaction with the workplace, job satisfaction information, and second trait information included in the second attribute information, based on the pre-stored second artificial intelligence algorithm, and generating second sample information based on the analysis results, which reflects the trait of the worker member and job satisfaction according to their career path.

The pre-stored second artificial intelligence algorithm is an algorithm that analyzes and trains the correlation between the second attribute information, second trait information, and second sample information of other worker members, and trains patterns identified by analyzing the correlations multiple times between the second attribute information, second trait information, and second sample information of other worker members, so that when analyzing the correlation between the second attribute information and second trait information of the worker member, the algorithm generates second sample information based on the

trained pattern that reflects the trait of the worker member and job satisfaction according to their career path.

The first sample information is divided by category into a plurality of career paths and job preferences set for each trait in the plurality of college student accounts, and is analyzed by the pre-stored career and job recommendation algorithm based on the same trait and career path as the second sample information, and the second sample information is divided by category into a plurality of career paths and job satisfaction based on the trait in the plurality of worker accounts, and is analyzed by the pre-stored career and job recommendation algorithm based on the same trait and career path as the first sample information.

The personalized guide providing step includes a model training step of analyzing and training the correlation between the first sample information and the second sample information based on the same trait and career path after the generation of the first sample information and the second sample information is completed, based on the pre-stored career and job recommendation algorithm; a third attribute information identification step of identifying third attribute information, which includes personal introduction information, grade information, and third trait information, registered in the student account when receiving a career and job recommendation request from the student account, after the model training step has been completed; and a guide information generation step of

analyzing the correlation between the personal introduction information, grade information, and third trait information included in the third attribute information, based on the pre-stored career and job recommendation algorithm, generating career guides based on the analysis results that reflect the trait of the adolescents and college students, predicting career paths and job roles based on the predicted career guide, and generating personalized guide information based on the predicted career guide and predicted job roles, and providing it to the student account.

The third attribute information identification step includes identifying third trait information as the registered trait information of the student account as the third trait information, or identifying third trait information based on a multiple distribution range process through natural language processing models and sentiment analysis models by analyzing the first sample information and the second sample information, and setting a reference trait value through the pre-stored career and job recommendation algorithm based on sentence-based trait information derived by analyzing personal introduction information of the student account.

The guide information generation step includes a career guide generation step of a career guide generation step of analyzing a correlation between personal introduction information, academic performance information, and third trait information included in the third attribute

information based on the previously stored career job recommendation algorithm, and predicting a career guide for job selection of adolescents and college students based on a career that reflects the traits of adolescents and college students through the analysis result of the correlation, and generating career guide information; a job curation generation step of, when the prediction of the career guide is complete, analyzing the career guide through the previously stored career job recommendation algorithm, predicting a candidate group for jobs that can be performed based on the career guide, and predicting job curation for jobs that can be performed based on the career guide by deriving the role and attitude of the job included in the predicted candidate group, necessary knowledge for performing the job, and necessary skills for performing the job; and a guide information providing step of, when the generation of the career guide information and the job curation information is completed, generating the personalized guide information including the generated career guide information and job curation information and providing it to the student account.

The career guide generation step includes a qualification possession confirmation step of checking whether the student account's user, adolescents and college students, possess the necessary qualifications required in the predicted career guide after the career guide is predicted; and a qualification complement information generation step of generating

qualification complement information including preparation subjects, exam eligibility requirements, average preparation period, exam hosting institution, exam schedule, exam application cost, and exam application method for acquiring necessary qualifications when it is confirmed that the student account's user does not have the required qualifications, and including this qualification complement information as part of the career guide information.

The employment link information providing step includes a company extraction step of deriving at least one company capable of performing the recommended job role through analyzing the correlation between the career guide information and job curation information in the personalized guide information, based on the pre-stored employment support service recommendation algorithm; and a service information providing step of generating employment link service information, which includes company attribute information, personalized resume writing guides, and personalized interview guides for employment at the company, and providing it to the student account.

In a device for recommending career paths and job roles to adolescents and college students, implemented by a computing device comprising one or more processors and one or more memories storing executable instructions in accordance with an embodiment of the present invention, when receiving real-time the first attribute information

registered in a plurality of college student accounts of college student members in a career and job recommendation platform, based on a pre-stored first artificial intelligence algorithm, analyzing the first attribute information to generate first sample information used for recommending career paths and job roles to adolescents and college students, a college student-based sample generation section; during the execution of the college student-based sample generation section, when receiving real-time the second attribute information registered in a plurality of worker accounts of worker members in the career and job recommendation platform, based on a pre-stored second artificial intelligence algorithm, analyzing the second attribute information to generate second sample information used for recommending career paths and job roles to adolescents and college students, a worker-based sample generation section; when the generation of the first sample information and the second sample information is completed, after training the pre-stored career and job recommendation algorithm with the first and second sample information, receiving a career and job recommendation request from a student account registered as an adolescent or college student in the career and job recommendation platform, and based on the pre-stored career and job recommendation algorithm, analyzing the third attribute information registered in the student account, generating personalized guide information containing recommended career paths and job roles for the student account's user, and providing it to the student

account, a personalized guide providing section; and when the generation of the personalized guide information is completed, analyzing the correlation between the details in the personalized guide information through the pre-stored employment support service recommendation algorithm to generate employment link service information for the recommended job roles, and providing it to the student account, an employment link information providing section; characterized by comprising the above sections.

As a computer-readable recording medium according to an embodiment of the present invention, the computer-readable recording medium stores instructions that enable the computing device to perform the following steps:

When receiving real-time the first attribute information registered in a plurality of college student accounts of college student members in a career and job recommendation platform, based on a pre-stored first artificial intelligence algorithm, analyzing the first attribute information to generate first sample information used for recommending career paths and job roles to adolescents and college students, a college student-based sample generation step; during the execution of the college student-based sample generation step, when receiving real-time the second attribute information registered in a plurality of worker accounts of worker members in the career and job recommendation platform, based on a pre-stored second artificial intelligence algorithm, analyzing the second

attribute information to generate second sample information used for recommending career paths and job roles to adolescents and college students, a worker-based sample generation step; when the generation of the first sample information and the second sample information is completed, after training the pre-stored career and job recommendation algorithm with the first and second sample information, receiving a career and job recommendation request from a student account registered as an adolescent or college student in the career and job recommendation platform, and based on the pre-stored career and job recommendation algorithm, analyzing the third attribute information registered in the student account, generating personalized guide information containing recommended career paths and job roles for the student account's user, and providing it to the student account, a personalized guide providing step; and when the generation of the personalized guide information is completed, analyzing the correlation between the details in the personalized guide information through the pre-stored employment support service recommendation algorithm to generate employment link service information for the recommended job roles, and providing it to the student account, an employment link information providing step; characterized by comprising the above steps.

【Brief Description of the Drawings】

Fig. 1 is a flowchart illustrating a method for recommending career

paths and job roles to adolescents and college students according to an embodiment of the present invention.

Fig. 2 is a flowchart illustrating the college student-based sample generation step of the method for recommending career paths and job roles to adolescents and college students according to an embodiment of the present invention.

Fig. 3 is a flowchart illustrating the worker-based sample generation step of the method for recommending career paths and job roles to adolescents and college students according to an embodiment of the present invention.

Fig. 4 is a flowchart illustrating the personalized guide providing section of the device for recommending career paths and job roles to adolescents and college students according to an embodiment of the present invention.

Fig. 5 is a flowchart illustrating the third attribute information identification section of the device for recommending career paths and job roles to adolescents and college students according to an embodiment of the present invention.

Fig. 6 is a flowchart illustrating the guide information generation step of the method for recommending career paths and job roles to adolescents and college students according to an embodiment of the present invention.

Fig. 7 is a flowchart illustrating the career guide generation step of the method for recommending career paths and job roles to adolescents and college students according to an embodiment of the present invention.

Fig. 8 is a diagram illustrating an example of the internal configuration of the computing device according to an embodiment of the present invention.

FIG. 9 is a diagram illustrating an example of the internal configuration of a computing device according to an embodiment of the present invention.

【Detailed Description of the Invention】

Hereinafter, various embodiments and/or aspects are disclosed with reference to the drawings. In the following description, numerous specific details are disclosed to help in the general understanding of one or more aspects. However, it should be understood by those skilled in the art that these aspects can be practiced without these specific details. The following description and the accompanying drawings provide specific examples of cer

tain exemplary aspects of one or more embodiments. However, these aspects are illustrative, and various methods within the principles of the different aspects may be used. The described description intends to include such aspects and their equivalents.

The terms "embodiment," "example," "aspect," and "exemplary" as used in this specification are not intended to imply that any embodiment or design is superior or has advantages over others.

Additionally, the terms "comprises" and/or "comprising" are intended to mean that the feature and/or component is present, but it does not exclude the presence or addition of one or more other features, components, and/or groups thereof.

Furthermore, terms such as "first," "second," etc., which include ordinal numbers, may be used to describe various components, but these components are not limited by these terms. These terms are used only to distinguish one component from another. For example, a first component may be named a second component without departing from the scope of the invention, and similarly, a second component may be named a first component.

The term "and/or" includes any combination of related items or any individual item from the listed items.

Additionally, in the embodiments of the present invention, unless otherwise specifically defined, all terms used here, including technical or scientific terms, have the same meaning as generally understood by those skilled in the art to which the present invention pertains. Terms that are generally defined in standard dictionaries should be interpreted according to their meanings in the context of the related technology, and unless

explicitly defined in the embodiments of the present invention, they should not be interpreted in an idealistic or excessively formal sense.

Fig. 1 is a flowchart illustrating a method for recommending careers and jobs to teenagers and college students according to an embodiment of the present invention.

Referring to Fig. 1, a method for recommending careers and jobs to teenagers and college students implemented in a computing device including one or more processors and one or more memories storing executable instructions for the processor can include a college student-based sample generation step (S101 step), a working professional-based sample generation step (S103 step), a personalized guide providing step (S105 step), and a recruitment linkage information providing step (S107 step).

In step S101, when the one or more processors (hereinafter referred to as the "processor") receive real-time first attribute information registered in multiple college student accounts of college student members in a career and job recommendation platform for teenagers and college students, the processor analyzes the first attribute information based on a pre-stored first artificial intelligence algorithm to generate first sample information to be used when recommending careers and jobs to the teenagers and college students through the analysis result.

According to one embodiment, the career and job recommendation platform may not only provide career and job recommendation services for teenagers and college students, but also offer personalized career and job recommendations to college students, working professionals, middle-aged individuals, and elderly people.

According to one embodiment, the processor may receive real-time first attribute information from multiple college student accounts registered as college student members of the career and job recommendation platform.

According to one embodiment, the first attribute information may include the college student member's middle and high school grades, first education information (e.g., university, department, courses, course grades), satisfaction information regarding the chosen department (e.g., satisfaction with the course process, courses, and other employment programs), expected information about the desired job (e.g., desired job, desired company, desired job tasks, desired salary, desired benefits, etc.), additional course information (e.g., middle and high school study notes, course records, etc.), and may not be limited to these.

According to one embodiment, the processor may receive real-time first attribute information regarding college students not only from multiple college student accounts registered as college student members in the career and job recommendation platform but also from other platforms

associated with the career and job recommendation platform (e.g., online lecture platforms, public institution platforms).

According to one embodiment, the processor may analyze the correlation between detailed information included in the first attribute information based on the pre-stored first artificial intelligence algorithm to generate first sample information, which is used when recommending careers and jobs to teenagers and college students.

According to one embodiment, the pre-stored first artificial intelligence algorithm may be an algorithm that analyzes the correlation between the middle and high school grades, first education information, satisfaction with the department, expected information about the desired job, and additional course information of the college student members . At this point, the pre-stored first artificial intelligence algorithm may also analyze the first preference information of the college student members to generate first sample information based on the preferences for careers and jobs that reflect the college student members ' preferences.

In other words, the first sample information may include information about jobs preferred by college student members , who have different preferences, based on the career paths they pursued during their adolescents and college years. For example, it may include the type of preferred job according to a career that reflects the college student member's preferences, certifications prepared to perform the preferred job,

courses taken to perform the preferred job, extracurricular activities undertaken to perform the preferred job, preferred companies that operate the preferred job, benefits and salary of the preferred company operating the preferred job, and other similar information.

Regarding the above, a detailed description of the first artificial intelligence algorithm will be provided in Fig. 2.

According to one embodiment, during the college student-based sample generation step (S101 step), the processor can also perform the working professional-based sample generation step (S103 step).

In step S103, while the function of the college student-based sample generation step (S101 step) is being performed, when the processor receives real-time second attribute information registered in multiple working professional accounts of working professional members in the career and job recommendation platform, the processor analyzes the second attribute information based on the pre-stored second artificial intelligence algorithm and generates second sample information used when recommending careers and jobs to teenagers and college students through the analysis result.

According to one embodiment, the processor can receive real-time second attribute information from multiple working professional accounts registered as working professional members in the career and job recommendation platform.

According to one embodiment, the first attribute information may include comprehensive grade information (e.g., middle and high school grades, university grades), second education information (e.g., university, department, courses, course grades), self-introduction information (e.g., self-introduction letter when applying for a company), job competency evaluation information (e.g., results of competency tests performed when applying for a company), satisfaction information regarding the workplace (e.g., satisfaction with the salary of the company joined, satisfaction with the company's benefits, satisfaction with work-life balance), and job satisfaction information (e.g., satisfaction with the job performed at the company joined, satisfaction survey regarding the job performed at the company) and may not be limited to these.

According to one embodiment, the processor may receive real-time second attribute information regarding working professionals not only from multiple working professional accounts registered as working professional members in the career and job recommendation platform but also from other platforms associated with the career and job recommendation platform (e.g., online lecture platforms, public institution platforms).

According to one embodiment, the processor may analyze the correlation between detailed information included in the second attribute information based on the pre-stored second artificial intelligence

algorithm to generate second sample information, which is used when recommending careers and jobs to teenagers and college students.

According to one embodiment, the pre-stored second artificial intelligence algorithm may be an algorithm that analyzes the correlation between comprehensive grade information, second education information, self-introduction information, job competency evaluation information, satisfaction with the workplace, and job satisfaction information of the working professional members. At this point, the pre-stored second artificial intelligence algorithm may also analyze the second preference information of the working professional members to generate second sample information based on job satisfaction according to career paths that reflect the working professional members' preferences.

In other words, the second sample information may include information about job satisfaction in the current job of multiple working professional members, who have different preferences, based on the careers they pursued during their adolescents and college years. For example, it may include the type of current job reflecting the working professional member's preferences, detailed satisfaction with the work-life balance of the current job reflecting the working professional member's preferences, detailed satisfaction with the tasks performed in the current job reflecting the working professional member's preferences, detailed satisfaction with the salary of the current job reflecting the working

professional member's preferences, and detailed satisfaction with the benefits of the current job (or workplace) reflecting the working professional member's preferences, among other information.

Regarding the above, a detailed description of the second artificial intelligence algorithm will be provided in Fig. 3.

According to one embodiment, once the generation of the first sample information and the second sample information is completed, the processor may perform the personalized guide provision step (S105 step).

In step S105, once the generation of the first sample information and the second sample information is completed, when the processor receives a career and job recommendation request from a student account registered as a teenager or college student in the career and job recommendation platform, the processor, based on the pre-stored career and job recommendation algorithm, analyzes the third attribute information registered in the student account and generates and provides personalized guide information containing the career and job recommendations for the student account's user, who is a teenager or college student.

According to one embodiment, the pre-stored career and job recommendation algorithm may analyze the correlation between the preference of multiple jobs for each career set by the multiple college student accounts, based on the first sample information, and the satisfaction of multiple jobs for each career set by the multiple working professional

accounts, based on the second sample information, under the same preferences and careers (e.g., courses, certifications, extracurricular activities, etc.) to perform the analysis and training.

Thus, the pre-stored career and job recommendation algorithm may analyze and train the correlation between the first sample information and the second sample information. Based on the patterns derived from multiple analyses, it analyzes the third attribute information registered in the student account, predicting the personalized career and job for the user, who is a teenager or college student, and generates personalized guide information based on the predicted career and job.

In other words, the pre-stored career and job recommendation algorithm may be an algorithm that analyzes and trains the correlation between job preferences based on the careers of college students with different preferences and job satisfaction based on the careers of working professionals with different preferences, in order to predict and recommend personalized careers and jobs for teenagers and college students. This algorithm may include models such as the ANN (artificial neural network) model, CNN (convolutional neural network) model, and RNN (recurrent neural network) model, as well as other various models (e.g., natural language processing models, sentiment analysis models, etc.).

Accordingly, the personalized guide information may include career guide information personalized to the preferences of the teenager or

college student(e.g., recommended universities, recommended departments, recommended courses, recommended certifications, etc.), and job curation information about the job (e.g., recommended jobs, industries where the recommended jobs can be performed, recommended companies in those industries, work-life balance, salary, and benefits of the recommended companies) that the teenager or college student can perform based on the personalized career.

According to one embodiment, once the generation of the personalized guide information is completed, the processor may perform the employment connection information provision step (S107 step).

In step S107, once the generation of the personalized guide information is completed, the processor may analyze the correlation between the detailed information included in the personalized guide information through the pre-stored employment support service recommendation algorithm and generate employment connection service information for the job recommended for career selection. The generated information is then provided to the student account.

According to one embodiment, the processor, once the generation of the personalized guide information is completed, may analyze the correlation between the career guide information and the job curation information included in the personalized guide information through the pre-stored employment support service recommendation algorithm.

According to one embodiment, the pre-stored employment support service recommendation algorithm may analyze the correlation between the detailed information included in the personalized guide information provided to other teenagers or college students, and the self-introduction information, interview feedback information, and attribute information (e.g., company name, business industry, department in the company, department-specific jobs, etc.) of the companies where other teenagers or college students who received the personalized guide information have been employed, along with job competency evaluation information, satisfaction with the workplace, and job satisfaction information. The algorithm may then train the pattern values derived from this analysis.

Thus, the processor, through the pre-stored employment support service recommendation algorithm, may analyze the correlation between the career guide information and job curation information included in the personalized guide information and generate employment connection service information for the recommended job based on the results. The generated information will be provided to the student account for career selection.

In connection with this, the employment connection service information may include attribute information about companies where the recommended job can be performed (e.g., company name, business industry, department in the company, company size, department-specific jobs), as well

as personalized resume writing guides and interview guides for employment at those companies.

Figure 2 is a flowchart for explaining the college student-based sample generation step in the method for recommending career paths and jobs to teenagers and college students according to one embodiment of the present invention.

Referring to Figure 2, the method for recommending career paths and jobs to teenagers and college students, implemented in a computing device comprising one or more processors and one or more memories storing instructions executable by the processors, can include the college student-based sample generation step (e.g., college student-based sample generation step S101 in Figure 1).

In one embodiment, the college student-based sample generation step involves receiving first attribute information registered in a plurality of college student accounts of college student members of the career job recommendation platform in real-time. Based on the received first attribute information, the first artificial intelligence algorithm stored in advance analyzes the information, generating a first sample information used to recommend career paths and jobs to the teenagers and college students.

The college student-based sample generation step, in detail, can include sub-steps: receiving first attribute information (S201),

identifying college student traits (S203), and generating first sample information (S205).

In step S201, the processor can receive in real-time the first attribute information, which includes middle and high school grades, first admission information, satisfaction with the admission department, expectations regarding desired jobs (desired roles), and additional course information registered in the college student accounts of the college student members .

In one embodiment, the processor may receive the first attribute information in real-time from other platforms associated with the career job recommendation platform, such as online lecture platforms or public institution platforms.

In one embodiment, while the function of the first attribute information reception step (S201) is being performed, the processor may also execute the college student trait identification step (S203).

The processor, during the first attribute information reception step (S201), can identify first trait information based on MBTI, personality tests, and psychological analysis registered in the college student accounts.

The first trait information is information visualizing the traits of college student members , for example, the results based on predefined trait items identified by MBTI (e.g., extraverted, introverted, sensing,

intuitive, thinking, feeling, judging, perceiving), the grade of trait items identified by personality tests (e.g., leadership, cooperation, autonomy, diligence), and the grade of psychological items identified by psychological analysis (e.g., emotional isolation, assertiveness). This information could be organized as charts, detailed grades, or detailed content.

In one embodiment, after identifying the first trait information, the processor executes the first sample information generation step (S205) once the first attribute information reception step (S201) is complete.

In step S205, after completing the first attribute information reception step (S201), the processor, based on the first artificial intelligence algorithm stored in advance, analyzes the correlations between middle and high school grades, admission information, satisfaction with the admission department, expectations regarding desired jobs, additional course information, and the first trait information included in the first attribute information. Using the analysis results, the processor generates the first sample information based on career-related job preferences reflecting the traits of the college student members .

In one embodiment, the first artificial intelligence algorithm stored in advance analyzes and trains the correlation between the first attribute information, first trait information, and first sample information from other college student members . By analyzing the

correlations between the first attribute information, first trait information, and first sample information of other college student members , the algorithm trains patterns. When analyzing the correlations between the first attribute information and first trait information of a college student member, the trained pattern can be used to generate the first sample information based on career-related job preferences that reflect the traits of the college student member.

Thus, the first artificial intelligence algorithm can include ANN models (artificial neural network models), CNN models (convolutional neural network models), and RNN models (recurrent neural network models). Additionally, it may include algorithms from various models such as natural language processing models, sentiment analysis models, etc.

For example, the processor can verify from the first attribute information that a college student has an average grade of 2 in middle school and an average grade of 1 in high school. The processor can also confirm that the college student has been admitted to Seoul National University, majoring in robotics engineering, and that the student's courses focus on subjects related to robotic movement. Furthermore, satisfaction with the admission department and courses is found to be excellent, while the student's desired job expectations indicate interest in Samsung Electronics' robotics division, along with salary and benefits

expectations. The processor can also confirm that the student is taking business administration as a minor.

Additionally, the processor can identify from the first trait information that the college student member has 70% extraversion and 30% introversion, with 100% judging trait.

The processor can then analyze the correlations between the verification and identification results using the stored first artificial intelligence algorithm to generate the first sample information, reflecting career-related job preferences based on the college student's traits. For instance, the college student prefers a research position in the robotics engineering industry, with a desired salary above 100 million KRW and benefits including refreshment leave, maternity leave, remote work, flexible work hours, and annual in-company points of 3 million KRW.

The generated first sample information can reflect career-related job preferences based on the traits of many college students who are identified with 70% extraversion and 30% introversion, and 100% judging traits. It may also be based on the average career-related job preferences of a group of college students with similar traits.

In one embodiment, the first sample information can be categorized based on the job preferences for each of the multiple career paths, categorized by different traits. This information is analyzed using the

stored career job recommendation algorithm based on the same traits and career paths as the second sample information.

In this regard, the first sample information may include categories such as preferred academic paths, preferred industries for employment, preferred salary, and preferred benefits, such as refreshment leave, maternity leave, remote work, flexible work hours, and annual in-company points of 3 million KRW.

FIG. 3 is a flowchart illustrating the employee-based sample generation step in the method for recommending career paths and jobs to adolescents and college students according to an embodiment of the present invention.

Referring to FIG. 3, a method for recommending career paths and jobs to adolescents and college students, implemented on a computing device that includes one or more processors and one or more memories storing instructions that the processor can execute, may include an employee-based sample generation step (e.g., the college student-based sample generation step (S101) in FIG. 1).

According to one embodiment, the employee-based sample generation step includes receiving real-time second attribute information registered in a plurality of employee accounts, which are members of the career/job recommendation platform, while the college student-based sample generation

step (e.g., S101 in FIG. 1) is being performed. Based on the received second attribute information, the processor may analyze the information using a pre-stored second artificial intelligence algorithm and generate second sample information, which is used when recommending career paths and jobs to adolescents and college students.

In one embodiment, the employee-based sample generation step may include detailed steps to perform the above functions, including a second attribute information reception step (S301), an employee trait identification step (S303), and a second sample information generation step (S305).

In step S301, the processor receives real-time second attribute information, which includes the comprehensive academic performance, second admission information (e.g., university, department, subjects taken, academic performance), self-introduction, job competency evaluation, job satisfaction, and satisfaction with the workplace of the employee members registered in the plurality of employee accounts.

According to one embodiment, the processor may receive the second attribute information for each of the plurality of employee accounts in real-time, or it may receive the second attribute information about employees in real-time from other platforms (e.g., online course platforms, public institution platforms) linked to the career/job recommendation platform.

In one embodiment, while the second attribute information reception step (S301) is being performed, the processor may perform the employee trait identification step (S303).

According to one embodiment, during the second attribute information reception step (S301), the processor identifies second trait information based on MBTI, personality tests, and psychological analysis for each of the employee accounts.

The second trait information refers to information visualizing the employee's traits, such as results from predefined trait categories identified by MBTI (e.g., extraversion, introversion, sensing, intuition, thinking, feeling, judging, perceiving), personality tests (e.g., leadership, cooperativeness, independence, diligence), or psychological analysis (e.g., emotional isolation, self-assertion) visualized as graphs or detailed ratings and descriptions.

According to one embodiment, once the second trait information identification is completed, the processor proceeds to the second sample information generation step (S305) after the completion of the second attribute information reception step (S301).

In step S305, after the second attribute information reception step (S301) is completed, the processor analyzes the relationships between the second attribute information, which includes comprehensive academic performance, second admission information, self-introduction, job

competency evaluation, satisfaction with the workplace, job satisfaction, and second trait information, using the pre-stored second artificial intelligence algorithm. Based on the analysis results, the processor generates second sample information based on the job satisfaction and career preferences of the employee, reflecting their traits.

In one embodiment, the pre-stored second artificial intelligence algorithm is an algorithm that analyzes and trains the relationships between the second attribute information, second trait information, and second sample information of other employee members. By analyzing these relationships repeatedly, the algorithm trains patterns from multiple employees, which are then applied when analyzing the relationship between the second attribute and second trait information for the current employee. This pattern is used to generate second sample information based on job satisfaction and career preferences. The second artificial intelligence algorithm may identify patterns distinct from those identified by the first artificial intelligence algorithm.

The pre-stored second artificial intelligence algorithm may include models such as the ANN model (artificial neural network model), CNN model (convolutional neural network model), and RNN model (recurrent neural network model), or other types of algorithm models.

For example, the processor may verify the comprehensive academic performance in the second attribute information, confirming that the

employee had an average grade of 2 in middle school and an average of 1 in high school, with an average grade of A in university. The processor may also verify the second admission information, confirming that the employee graduated from Yonsei University with a major in Computer Engineering, and that their courses mostly focused on software design. Satisfaction with the department's courses and school life may be checked, along with information in the self-introduction, such as the employee's application to Samsung Electronics' wireless internet division's software design department, awards related to software development, and certifications from government-sponsored programs. Job competency evaluations may indicate the employee's strong abilities in spatial awareness, problem-solving, concentration, and situational judgment, and satisfaction with the workplace may show high contentment due to housing support and a high salary. Job satisfaction may be high due to career enhancement from participating in large projects as a software developer.

Furthermore, the processor identifies the employee's traits based on the second trait information, such as extraverted traits 70% and introverted traits 30%, with a judging trait of 100%.

Based on the analysis of the relationships and the identified results, the processor generates second sample information that reflects the employee's career preferences, including high salary (over 100 million KRW), various benefits (remote work, flexible working hours, company points

worth 4 million KRW annually), and alignment with job competency evaluation results and required skills. The second sample information may also include details about the employee's career achievements, such as their role in core algorithm development for large projects, leading to career satisfaction.

The second sample information generated may reflect the traits of multiple employees with similar characteristics, such as extraversion 70% and introversion 30%, with a judging trait of 100%, based on their job satisfaction related to career preferences. This information may also reflect patterns based on average values corresponding to multiple employees' second attribute information and second trait information within a predefined trait error range.

According to one embodiment, the second sample information may be information that is divided by category according to the satisfaction of multiple jobs for each of the multiple career paths set for each of the multiple traits of the multiple employee accounts, and may be information analyzed by the career job recommendation algorithm stored above based on the same traits and the same career paths as the first sample information.

In relation to the above, the second sample information may be configured as a category that allows the above content to be distinguished by including the content that the result of the job competency evaluation matches the competencies required for the current job, and that the

satisfaction is high due to career improvement by taking charge of core algorithm development work in a large project through awards and qualifications. For example, the category may include the industry of work, the job of work, the welfare of the workplace of work, and detailed satisfaction at the workplace of work.

FIG. 4 is a flowchart illustrating the personalized guide provision section of a device for recommending career paths and jobs to adolescents and college students, according to one embodiment of the present invention.

Referring to FIG. 4, the device for recommending career paths and jobs to adolescents and college students, which is implemented in a computing device that includes one or more processors and one or more memories storing instructions executable by the processor, may include a personalized guide provision section (400) (e.g., performing the same function as the personalized guide provision step (S105) in FIG. 1).

According to one embodiment, the personalized guide provision section (400) generates personalized guide information (405a) for the adolescent and college student when it receives a career and job recommendation request from a student account registered in the career and job recommendation platform. This occurs after generating first sample information (401a) and second sample information (401b) and training the pre-stored career and job recommendation algorithm (401c) based on this

information. The personalized guide provision section analyzes the third attribute information (403a) registered in the student account and generates personalized guide information containing career paths and jobs recommended for the student.

The personalized guide provision section (400) may include detailed components to perform the aforementioned functions: a model training section (401), a third attribute information identification section (403), and a guide information generation section (405).

In one embodiment, the model training section (401) completes the generation of first sample information (401a) and second sample information (401b) and then analyzes and trains the correlation between the first and second sample information based on the pre-stored career and job recommendation algorithm (401c). This training is performed by analyzing and training the correlation based on the same trait and career, such as the same courses taken, qualifications, extracurricular activities, etc.

In another embodiment, the pre-stored career and job recommendation algorithm (401c) trains the correlation between multiple careers and job preferences set for multiple trait types in the first sample information (401a) containing multiple college student accounts, and the correlation between multiple careers and job satisfaction set for multiple career paths in the second sample information (401b) containing multiple employee accounts.

For example, the pre-stored career and job recommendation algorithm (401c) identifies a correlation by analyzing the first sample information (401a) for a college student with an extroverted trait 70% and an introverted trait 30%, and a second sample information (401b) for an employee with the same trait traits.

In one embodiment, the third attribute information identification section (403) identifies the third attribute information (403a) that includes personal introduction information, academic information, and third trait information from the student account when receiving a career and job recommendation request. This occurs after the training of the career and job recommendation algorithm (401c) has been completed.

The third attribute information (403a) may include personal introduction information (e.g., hobbies, age, values, desired university and major, desired job, desired salary, career capability test results, etc.), academic information (e.g., middle and high school grades, awards, certifications obtained, extracurricular activities, etc.), and third trait information.

The third trait information may include registered trait information and sentence-based trait information. Registered trait information includes information visualizing the trait of the adolescent or college student, such as results from MBTI (e.g., extroversion, introversion, sensing, intuition, thinking, feeling, judging, perceiving), personality test

results (e.g., leadership, cooperation, independence, diligence), or psychological analysis results (e.g., emotional isolation, self-assertion, etc.), which can be visualized in graphs or detailed grades.

Regarding the above, a detailed explanation of the sentence-based trait information will be provided in FIG. 5.

According to one embodiment, when receiving a career and job recommendation request from the student account, the third attribute information identification section (403) may identify third attribute information (403a) including personal introduction information, academic performance information, and third trait information registered in the student account. At this time, the third attribute information identification section (403) may receive third attribute information (403a) about adolescents and college students in real time not only from student accounts registered as adolescents and college students of the career and job recommendation platform, but also from other platforms (e.g., Internet lecture platforms, public institution platforms) previously linked with the career and job recommendation platform.

In one embodiment, after the function of the third attribute information identification section (403) is completed, the guide information generation section (405) analyzes the correlation between the personal introduction information, the grade information, and the third trait information included in the third attribute information (403a) based

on the previously stored career and job recommendation algorithm (401c), and predicts a career guide for choosing a job for adolescents and college students based on a career that reflects the traits of adolescents and college students through the analysis result of the correlation, and predicts a job to be recommended to adolescents and college students based on the predicted career guide, and generates customized guide information based on the predicted career guide and the predicted job.

According to one embodiment, the guide information generation section (405) can analyze the correlation between the personal introduction information, the grade information, and the third trait information included in the third attribute information (403a) based on the previously stored career and job recommendation algorithm (401c).

For example, the guide information generation section (405) may identify that the adolescent or college student has an extroverted trait 70% and introverted trait 30%, with a judgment trait of 100%. It may also identify that the student holds a software design certification, wishes to become a software developer, and has won software-related competitions three times.

Accordingly, the guide information generation section (405) analyzes the correlation between the confirmed information based on the previously stored career and job recommendation algorithm (401c), and based on the result of the correlation, identifies the traits of the adolescents and

college students (70% extroverted traits and 30% introverted traits, and 100% judgment tendencies) and predicts a career guide for choosing a job for the adolescents and college students based on a career (desiring to be a software developer, holding a software design certificate, and having two or more awards).

At this time, the predicted career guide is guide information based on the career of a worker with a similar career path to the adolescents and college students, and may be a guide (e.g., required courses, required qualifications, lectures for required qualifications, etc.) that allows the adolescents and college students to prepare for the career of the worker with a similar career path to the adolescents and college students.

After this, when the prediction of the career guide is completed, the guide information generation section (405) can predict a job based on the predicted career guide. At this time, the predicted job may be a job that the adolescents and college students actually engage in among the jobs desired by the adolescents and college students.

According to one embodiment, when the prediction of the job based on the career guide is completed along with the career guide, the guide information generation section (405) can generate personalized guide information (405a) based on the predicted career guide and the predicted job. That is, the above-mentioned personalized guide information (405a) is information that includes a guide on recommended jobs for the adolescents

and college students and the career path necessary to achieve the recommended jobs, and may be a personalized guide that reflects the traits of the adolescents and college students.

FIG. 5 is a flowchart for explaining the third attribute information identification section of the device for recommending career paths and job roles to adolescents and college students according to an embodiment of the present invention.

Referring to FIG. 5, the device for recommending career paths and job roles to adolescents and college students, implemented in a computing device that includes one or more processors and one or more memories storing instructions that can be executed by the processor, may include a third attribute information identification section (500) (e.g., the third attribute information identification section (403) in FIG. 4).

According to an embodiment, the third attribute information identification section (500) can identify third attribute information that includes personal introduction information, academic performance information, and third trait information registered in the student account when a career/job recommendation request is received from the student account, after the career/job recommendation algorithm (505) pre-stored by the model training section (e.g., the model training section (401) in FIG. 4) has been completed.

FIG. 6 is a flowchart for explaining the guide information generation step of the method for recommending career paths and job roles to adolescents and college students according to an embodiment of the present invention.

Referring to FIG. 6, the method for recommending career paths and job roles to adolescents and college students, implemented in a computing device that includes one or more processors and one or more memories storing instructions that can be executed by the processor, may include a guide information generation step (e.g., performing the same function as the guide information generation section (405) in FIG. 4).

According to an embodiment, the guide information generation step performs the following functions: after the third attribute information identification step (e.g., performing the same function as the third attribute information identification section (403) in FIG. 4) is completed, based on the pre-stored career/job recommendation algorithm, it analyzes the correlation between personal introduction information, academic performance information, and third trait information included in the third attribute information, predicts a career guide for adolescents and college students based on the career path that reflects their traits, and predicts jobs to recommend based on the predicted career guide. A personalized guide information is generated based on the predicted career guide and predicted jobs.

According to an embodiment, the guide information generation step may include detailed steps to perform the aforementioned functions, such as the career guide generation step (S601), the job curation generation step (S603), and the guide information provision step (S605).

In step S601, the one or more processors (hereinafter referred to as the processor) can analyze the correlation between the personal introduction information, academic performance information, and third trait information included in the third attribute information based on the pre-stored career/job recommendation algorithm and generate career guide information by predicting a career guide for adolescents and college students based on the analyzed correlation, reflecting their traits.

According to an embodiment, the processor can analyze the correlation between personal introduction information, academic performance information, and third trait information in the third attribute information based on the pre-stored career/job recommendation algorithm.

For example, the processor can identify that the trait of the adolescents and college students is 70% extroverted and 30% introverted, and the decision-making trait is 100% based on the third trait information. Additionally, the processor can identify that the personal introduction information shows the possession of a software design certification, desired job as a software developer, and 3-time awards in software-related competitions.

Accordingly, the processor analyzes the correlation between the above-mentioned confirmed information based on the above-mentioned stored career job recommendation algorithm, and based on the result of the correlation, identifies the traits of the adolescents and college students (70% extroverted traits, 30% introverted traits, and 100% judgmental tendencies), and predicts a career guide for the adolescents and college students' job selection based on the career path (desiring to be a software developer, holding a software design certificate, and having two or more awards).

The predicted career guide will be a guide based on the career of a professional who has a similar career path to the adolescents and college students, advising them to prepare for a similar career (e.g., necessary courses, required certifications, courses for obtaining required certifications).

In this context, once the career guide prediction is completed, the processor can generate career guide information containing the content of the predicted career guide.

According to an embodiment, once the career guide prediction is completed, the processor may perform the job curation generation step (S603).

In step S603, once the career guide prediction is completed, the processor analyzes the career guide using the pre-stored career/job

recommendation algorithm, predicts a candidate list of jobs that can be performed based on the career guide, extracts the role, attitude, required knowledge, and required skills for performing each job, and generates job curation information by predicting the job curation based on the career guide.

According to one embodiment, when the generation of the career guide information is completed, the processor analyzes the details based on the generated career guide information, such as required courses, required qualifications, and lectures for required qualifications, through a previously stored career job recommendation algorithm, thereby predicting a group of candidates for jobs that can be performed based on the career guide.

At this point, the job predicted by the processor can be a job in the industry of a professional with a similar career path as adolescents and college students(e.g., required courses, required certifications, and courses for obtaining certifications).

As a result, the processor can identify at least one job through the career guide provided to the adolescents and college students, and identify the candidate jobs for each job, generating job curation information.

The job curation information may include recommended jobs, industries where the recommended jobs can be performed, recommended companies in those industries, work-life balance, salary and benefits, the

qualifications for the recommended job, and the suitability score, which is derived based on the pattern values stored in the career/job recommendation algorithm.

According to one embodiment, when the processor completes predicting job curation including content and fit scores for recommended job history, the processor can generate job curation information based on the predicted job curation.

According to an embodiment, once the career guide information and job curation information generation are completed, the processor may perform the guide information provision step (S605).

In step S605, once the career guide information and job curation information generation are completed, the processor can generate personalized guide information, including the generated career guide information and job curation information, and provide it to the student account.

FIG. 7 is a flowchart illustrating the career guide generation step for recommending careers and jobs to adolescents and college students according to one embodiment of the present invention.

Referring to FIG. 7, the method for recommending careers and jobs to adolescents and college students, implemented in a computing device that includes one or more processors and one or more memories storing

instructions executable by the processor, may include a career guide generation step (e.g., step S601 of the career guide generation step in FIG. 6).

According to one embodiment, the career guide generation step may analyze the correlation between the personal introduction information, grade information, and third trait information included in the third attribute information based on a previously stored career job recommendation algorithm, and generate career guide information based on the career that reflects the adolescent or college student's trait by predicting a career guide for their job selection based on the analysis results.

According to one embodiment, the career guide generation step may include a sub-step for performing the aforementioned functions, such as a qualification possession check step (step S701) and a qualification supplementation information generation step (step S703).

In step S701, the processor may check whether the adolescent or college student, the user of the student account, possesses the essential qualifications required by the predicted career guide once the career guide for job selection based on their trait has been predicted.

In one embodiment, based on the career job recommendation algorithm, the processor analyzes the correlation between the personal introduction information, grade information, and third trait information included in the

third attribute information, and checks the required courses, required certifications, and courses for certification, etc., in the predicted career guide.

In this regard, the processor may check the essential qualifications required for the job in which the adolescent or college student is interested from the required courses, required certifications, and courses for certification.

Then, based on the personal introduction information, the processor may check if the adolescent or college student possesses qualifications that match the required qualifications.

According to one embodiment, the processor checks whether the adolescent or college student possesses the same qualifications as the required qualifications and, if not, performs the qualification supplementation information generation step (step S703).

In step S703, if the processor confirms that the adolescent or college student does not possess the required qualifications by performing the qualification possession check step (step S701), it generates supplementary information to acquire the missing qualifications, including preparatory subjects, certification exam eligibility requirements, average preparation periods, certification exam sponsoring organizations, certification exam schedules, certification exam application fees, and

application methods. This information is included as part of the career guide information.

According to one embodiment, if the processor detects missing essential qualifications, it generates supplementary information, including preparatory subjects, certification exam eligibility requirements, average preparation periods, certification exam sponsoring organizations, certification exam schedules, certification exam application fees, and application methods.

FIG. 8 is a flowchart illustrating the employment linkage information provision step for recommending careers and jobs to adolescents and college students according to one embodiment of the present invention.

Referring to FIG. 8, the method for recommending careers and jobs to adolescents and college students, implemented in a computing device that includes one or more processors and one or more memories storing instructions executable by the processor, may include an employment linkage information provision step (e.g., step S107 of the employment linkage information provision step in FIG. 1).

According to one embodiment, the employment linkage information provision step may analyze the correlation between detailed information contained in the personalized guide information through a previously stored employment support service recommendation algorithm, once the personalized guide information has been generated. This analysis is used to generate

employment linkage service information regarding the recommended job for job selection and provide it to the student account.

According to one embodiment, the employment linkage information provision step includes sub-steps such as a company extraction step (step S801) and a service information provision step (step S803).

In step S801, once the personalized guide information has been generated, the processor analyzes the correlation between the career guide information and job curation information contained in the personalized guide information through the employment support service recommendation algorithm, and based on the analysis results, extracts at least one company capable of performing the recommended job for the adolescent or college student.

According to one embodiment, when the generation of personalized guide information is completed, the processor can check the detailed information included in each of the career guide information and job curation information included in the personalized guide information.

More specifically, when the generation of personalized guide information is completed, the processor can check the required courses, required qualifications, lectures for required qualifications, and qualification supplement information included in the career guide information, and can check the recommended jobs based on the candidate group included in the job curation information, the industry in which the

recommended jobs can be performed, the recommended companies in the industry in which the recommended jobs can be performed, the work-life balance, annual salary, and benefits of the recommended companies, and the history of the recommended jobs included in the candidate group (e.g., qualifications, courses, and traits held by adolescents or college students for the characteristics of the corresponding jobs) and the suitability score.

According to one embodiment, when the processor completes verification of detailed information included in each of the career guide information and the job curation information, the processor can analyze the correlation between the verified detailed information through the previously stored job support service recommendation algorithm.

According to one embodiment, the stored employment support service recommendation algorithm analyzes the correlation between the detailed information (career guide and job curation information) provided to other adolescents or college students and the information received by students who have already been employed, such as their self-introduction, interview reviews, company attributes (e.g., company name, industry, departments, job roles), job competence evaluation, work satisfaction, job satisfaction, and job feedback, in order to extract patterns.

The processor analyzes the correlation between the required courses, required certifications, courses for certifications, supplementary

information, and the recommended jobs in the job curation information, using the pattern values derived from the training algorithm, and extracts at least one company where the recommended job can be performed from the recommended companies within the industry.

The extracted company is one where employees are performing jobs similar to the recommended job and career recommended to the adolescent or college student. The self-introduction information, interview reviews, company attributes, job competence evaluation, work satisfaction, job satisfaction, and job feedback from those employees are used as a basis for extracting the company.

Once the company extraction is complete, the processor performs the service information provision step (step S803).

In step S803, the processor generates employment linkage service information including the company's attributes, a personalized resume writing guide, and a personalized interview guide, and provides it to the student account.

According to one embodiment, the processor generates additional information such as the company's attributes, personalized resume writing guide, and personalized interview guide based on the analysis results of the previously stored employment support service algorithm and provides it to the student account.

At this time, the attribute information about the company, resume writing guide, and interview guide that are derived may be information derived based on the self-introduction, interview reviews, company attributes, job competence evaluation, work satisfaction, job satisfaction, and job feedback of employees who are performing the same job as the one recommended for the adolescent or college student.

Accordingly, the processor can generate recruitment-linked service information including attribute information for the derived company, a resume writing guide, and an interview guide, and provide the generated recruitment-linked service information to the student account.

FIG. 9 is a diagram illustrating an example of the internal configuration of a computing device according to an embodiment of the present invention.

FIG. 9 illustrates an example of the internal configuration of a computing device according to an embodiment of the present invention, and in the following description, unnecessary descriptions of embodiments that overlap with the descriptions of FIGS. 1 to 8 described above will be omitted.

As shown in FIG. 9, the computing device (10000) may include at least one processor (11100), memory (11200), a peripheral interface (11300), an input/output (I/O) subsystem (11400), a power circuit (11500), and a

communication circuit (11600). In this case, the computing device (10000) may be a user terminal connected to a haptic interface device (A) or may correspond to the aforementioned computing device (B).

The memory (11200) may, for example, include high-speed random access memory (RAM), magnetic disks, SRAM, DRAM, ROM, flash memory, or non-volatile memory. The memory (11200) may store software modules, instruction sets, or various data required for the operation of the computing device (10000).

At this time, the access to memory (11200) from other components such as the processor (11100) or the peripheral interface (11300) may be controlled by the processor (11100).

The peripheral interface (11300) can couple the input and/or output peripheral devices of the computing device (10000) with the processor (11100) and memory (11200). The processor (11100) may execute the software modules or instruction sets stored in memory (11200) to perform various functions for the computing device (10000) and process data.

The input/output subsystem (11400) may couple various input/output peripherals to the peripheral interface (11300). For example, the I/O subsystem (11400) may include a controller for coupling peripherals such as a monitor, keyboard, mouse, printer, or touch screen and sensors to the peripheral interface (11300). In other aspects, the input/output peripherals may be coupled directly to the peripheral interface (11300)

without going through the I/O subsystem (11400).

The power circuit (11500) may supply power to all or some of the components of the terminal device. For example, the power circuit (11500) may include power management systems, one or more power sources such as batteries or AC power, charging systems, power failure detection circuits, power converters or inverters, power status indicators, or any other components for generating, managing, and distributing power.

The communication circuit (11600) can enable communication with other computing devices via at least one external port.

Alternatively, as mentioned above, the communication circuit (11600) may include RF circuits, and by transmitting and receiving RF signals, also known as electromagnetic signals, it can enable communication with other computing devices.

This embodiment illustrated in FIG. 9 is just an example of a computing device (10000). The computing device (11000) may omit some of the components shown in FIG. 9, include additional components not shown in FIG. 9, or have a configuration or arrangement that combines two or more components. For example, a computing device for mobile communication terminals may include additional components such as a touch screen or sensors beyond those shown in FIG. 9, and the communication circuit (11600) may include circuits for various communication methods (WiFi, 3G, LTE, Bluetooth, NFC, Zigbee, etc.) using RF communication. Components that can

be included in the computing device (10000) may be implemented as hardware, software, or a combination of both, including one or more integrated circuits specialized for signal processing or applications.

The methods according to the embodiment of the present invention can be implemented as program instructions that can be executed through various computing devices and recorded on a computer-readable medium. In particular, the program according to this embodiment may be composed of a PC-based program or an application dedicated to mobile devices. Applications where the present invention is applied can be installed on user terminals through files provided by a file distribution system. For example, the file distribution system may include a file transfer section (not shown) that transmits the file upon a request from the user terminal.

The devices described above may be implemented as hardware components, software components, and/or a combination of hardware components and software components. For example, the devices and components described in the embodiments may be implemented using one or more general-purpose computers or special-purpose computers, such as, for example, a processor, a controller, an arithmetic logic section (ALU), a digital signal processor, a microcomputer, a field programmable gate array (FPGA), a programmable logic section (PLU), a microprocessor, or any other device capable of executing instructions and responding to them. The processing device may execute an operating system (OS) and one or more software

applications running on the operating system. In addition, the processing device may access, store, manipulate, process, and generate data in response to the execution of the software. For ease of understanding, the processing device is sometimes described as being used alone, but those skilled in the art will appreciate that the processing device may include multiple processing elements and/or multiple types of processing elements. For example, the processing section may include multiple processors, or a processor and a controller. Other processing configurations, such as parallel processors, are also possible.

The software may include a computer program, code, instructions, or a combination of one or more of these, which may configure a processing device to perform a desired operation or may independently or collectively command the processing device. The software and/or data may be permanently or temporarily embodied in any type of machine, component, physical device, virtual equipment, computer storage medium or device for interpretation by the processing device or for providing instructions or data to the processing device. The software may also be distributed over network-connected computing devices and stored or executed in a distributed manner. The software and data may be stored on one or more computer-readable recording media.

The method according to the embodiment may be implemented in the form of program commands that can be executed through various computer

means and recorded on a computer-readable medium. The computer-readable medium may include program commands, data files, data structures, etc., alone or in combination. The program commands recorded on the medium may be those specially designed and configured for the embodiment or may be those known to and available to those skilled in the art of computer software. Examples of the computer-readable recording medium include magnetic media such as hard disks, floppy disks, and magnetic tapes, optical media such as CD-ROMs and DVDs, magneto-optical media such as floptical disks, and hardware devices specially configured to store and execute program commands such as ROMs, RAMs, flash memories, etc. Examples of the program commands include not only machine language codes generated by a compiler, but also high-level language codes that can be executed by a computer using an interpreter, etc. The above hardware devices may be configured to operate as one or more software modules to perform the operations of the embodiments, and vice versa.

Although the embodiments described above have been explained with reference to specific embodiments and figures, it will be understood by those skilled in the art that various modifications and variations can be made based on the descriptions provided above. For example, the described technologies may be performed in a different order, and/or the components of the described systems, structures, devices, and circuits may be combined or associated in different ways or replaced or substituted with other

components or equivalents while achieving the same results. Therefore, other implementations, alternative embodiments, and equivalents fall within the scope of the claims that follow.

【Patent Claims】

【Claim 1】

A method for recommending career paths and job roles to adolescents and college students, implemented in a computing device comprising one or more processors and one or more memories storing instructions executable by the processor, comprising:

When receiving in real time the first attribute information registered in a plurality of college student accounts of the college student members of a career and job recommendation platform for recommending career paths and job roles to adolescents and college students, analyzing the first attribute information based on a pre-stored first artificial intelligence algorithm, and generating first sample information used for recommending career paths and job roles to the adolescents and college students through the analysis results (a college student-based sample generation step);

When receiving in real time the second attribute information registered in a plurality of employee accounts of the working professional members of the career and job recommendation platform while the function of the college student-based sample generation step is being performed, analyzing the second attribute information based on a pre-stored second artificial intelligence algorithm, and generating second sample information used for recommending career paths and job roles to the adolescents and

college students through the analysis results (an employee-based sample generation step);

When the generation of the first sample information and the second sample information is completed, and in a state where the pre-stored career and job recommendation algorithm has been trained using the first sample information and the second sample information, upon receiving a career and job recommendation request from a student account registered as an adolescent or college student on the career and job recommendation platform, analyzing the third attribute information registered in the student account based on the pre-stored career and job recommendation algorithm, and generating personalized guide information that includes the career path and job roles recommended to the adolescent or college student, and providing the personalized guide information to the student account (a personalized guide provision step); and

When the generation of the personalized guide information is completed, analyzing the correlation among the detailed information contained in the personalized guide information through a pre-stored employment support service recommendation algorithm, and generating employment linkage service information for the recommended job roles for job selection for the adolescent or college student, and providing the employment linkage service information to the student account (an employment linkage information provision step).

【Claim 2】

The method of Claim 1, wherein the college student-based sample generation step comprises:

A first attribute information reception step for receiving in real time the first attribute information registered in a plurality of college student accounts of the college student members, the first attribute information including middle and high school grades, first admission information, satisfaction information regarding the admission department, expected information regarding the desired job, and additional course information;

A college student trait identification step for identifying the first trait information based on MBTI, personality tests, and psychological analysis registered in the plurality of college student accounts while the function of the first attribute information reception step is being performed; and

A first sample information generation step, performed after the function of the first attribute information reception step is completed, for analyzing, based on the pre-stored first artificial intelligence algorithm, the correlation among the middle and high school grades, admission information, satisfaction information regarding the admission department, expected information regarding the desired job, additional

course information, and the first trait information contained in the first attribute information, and for generating the first sample information based on the analysis results that is based on the job preference according to the career reflecting the college student member's trait.

【Claim 3】

The method of Claim 2, wherein the pre-stored first artificial intelligence algorithm is an algorithm that analyzes and trains the correlation among the first attribute information, the first trait information, and the first sample information of other college student members, and by analyzing the correlation among the first attribute information, the first trait information, and the first sample information of other college student members repeatedly, trains patterns, so that when analyzing the correlation between the college student member's first attribute information and the first trait information, the algorithm generates the first sample information based on job preferences according to the career reflecting the college student member's trait, on the basis of the trained pattern.

【Claim 4】

The method of Claim 3, wherein the employee-based sample generation step comprises:

A second attribute information reception step for receiving in real time the second attribute information registered in a plurality of employee accounts of the working professional members of the career and job recommendation platform, the second attribute information including comprehensive grade information, second admission information, self-introduction information, job competency evaluation information, satisfaction information regarding the workplace, and job satisfaction information;

An employee trait identification step for identifying the second trait information based on MBTI, personality tests, and psychological analysis registered in the plurality of employee accounts while the function of the second attribute information reception step is being performed; and

A second sample information generation step, performed after the function of the second attribute information reception step is completed, for analyzing, based on the pre-stored second artificial intelligence algorithm, the correlation among the comprehensive grade information, second admission information, self-introduction information, job competency evaluation information, satisfaction information regarding the workplace, job satisfaction information, and the second trait information contained in the second attribute information, and for generating the second sample

information based on the analysis results that is based on job satisfaction according to the career reflecting the working professional member's trait.

【Claim 5】

The method of Claim 4, wherein the pre-stored second artificial intelligence algorithm is an algorithm that analyzes and trains the correlation among the second attribute information, the second trait information, and the second sample information of other working professional members, and by analyzing the correlation among the second attribute information, the second trait information, and the second sample information of other working professional members repeatedly, trains patterns, so that when analyzing the correlation between the working professional member's second attribute information and the second trait information, the algorithm generates the second sample information based on job satisfaction according to the career reflecting the working professional member's trait, on the basis of the trained pattern.

【Claim 6】

The method of Claim 5, wherein:

The first sample information is information categorized by category based on the job preferences for a plurality of careers set for each of the plurality of college student accounts according to a plurality of traits,

and is information analyzed by the pre-stored career and job recommendation algorithm based on the same trait and the same career as the second sample information; and

The second sample information is information categorized by category based on the job satisfaction for a plurality of careers set for each of the plurality of employee accounts according to a plurality of traits, and is information analyzed by the pre-stored career and job recommendation algorithm based on the same trait and the same career as the first sample information.

【Claim 7】

The method of Claim 6, wherein the personalized guide provision step comprises:

A model training step for analyzing and training, based on the pre-stored career and job recommendation algorithm, the correlation between the first sample information and the second sample information based on the same trait and the same career, after the generation of the first sample information and the second sample information is completed;

A third attribute information identification step, performed in a state where the training of the pre-stored career and job recommendation algorithm has been completed by the function of the model training step, for identifying the third attribute information that includes personal

introduction information, grade information, and third trait information registered in the student account when a career and job recommendation request is received from the student account; and

A guide information generation step, performed after the function of the third attribute information identification step is completed, for analyzing, based on the pre-stored career and job recommendation algorithm, the correlation among the personal introduction information, the grade information, and the third trait information contained in the third attribute information, and, based on the analysis results, predicting a career guide for job selection for the adolescent or college student that reflects the adolescent or college student's trait, predicting the job to be recommended based on the predicted career guide, and generating personalized guide information based on the predicted career guide and the predicted job.

【Claim 8】

The method of Claim 7, wherein the third attribute information identification step comprises:

Upon receiving a career and job recommendation request from the student account, identifying the registered trait information in the student account as the third trait information, or, through a multi-distribution range process for the trait derived by analyzing the first

sample information and the second sample information using a natural language processing model and a sentiment analysis model, setting a reference trait value based on the pre-stored career and job recommendation algorithm, and analyzing the personal introduction information registered in the student account to derive sentence-based trait information, which is identified as the third trait information.

【Claim 9】

The method of Claim 7, wherein the guide information generation step comprises:

A career guide generation step, based on the pre-stored career and job recommendation algorithm, for analyzing the correlation among the personal introduction information, the grade information, and the third trait information contained in the third attribute information, and generating career guide information by predicting a career guide for job selection for the adolescent or college student that reflects the adolescent or college student's trait;

Upon completion of the prediction of the career guide, analyzing the predicted career guide using the pre-stored career and job recommendation algorithm to predict a candidate group of jobs that can be performed based on the career guide, and deriving the role and attitude of the job, the required knowledge for performing the job, and the required skills for

performing the job from the candidate group to predict job curation information for the job that can be performed based on the career guide (a job curation generation step); and

Upon completion of the generation of the career guide information and the job curation information, generating personalized guide information that includes the generated career guide information and the job curation information, and providing the personalized guide information to the student account (a guide information provision step).

【Claim 10】

The method of Claim 9, wherein the career guide generation step comprises:

A qualification possession check step, wherein if the career guide for job selection for the adolescent or college student that reflects the adolescent or college student's trait has been predicted, the processor checks whether the essential qualifications required by the predicted career guide are possessed by the adolescent or college student, the user of the student account; and

A qualification supplementation information generation step, wherein if the function of the qualification possession check step confirms that the adolescent or college student does not possess the essential qualifications, the processor derives preparatory subjects, certification

exam eligibility requirements, average preparation period, certification exam sponsoring organization, certification exam schedule, certification exam application fee, and certification exam application method required to acquire the missing essential qualifications, and generates qualification supplementation information to be included as part of the career guide information.

【Claim 11】

The method of Claim 1, wherein the employment linkage information provision step comprises:

A company extraction step, wherein after the generation of the personalized guide information is completed, the processor, through the pre-stored employment support service recommendation algorithm, analyzes the correlation between the career guide information and the job curation information contained in the personalized guide information, and based on the analysis results, extracts at least one company capable of performing the job recommended for job selection for the adolescent or college student; and

A service information provision step, wherein after the extraction of the company is completed, the processor generates employment linkage service information that includes company attribute information and a personalized resume writing guide and a personalized interview guide for

employment at the company, and provides the employment linkage service information to the student account.

【Claim 12】

A device for recommending career paths and job roles to adolescents and college students, implemented in a computing device comprising one or more processors and one or more memories storing instructions executable by the processor, comprising:

A college student-based sample generation section that, when the first attribute information registered in a plurality of college student accounts of the college student members of a career and job recommendation platform for recommending career paths and job roles to adolescents and college students is received in real time, analyzes the first attribute information based on a pre-stored first artificial intelligence algorithm and generates first sample information used when recommending career paths and job roles to the adolescents and college students through the analysis results;

An employee-based sample generation section that, while the function of the college student-based sample generation section is being performed, when the second attribute information registered in a plurality of employee accounts of the working professional members of the career and job recommendation platform is received in real time, analyzes the second

attribute information based on a pre-stored second artificial intelligence algorithm and generates second sample information used when recommending career paths and job roles to the adolescents and college students through the analysis results;

When the generation of the first sample information and the second sample information is completed, with the pre-stored career and job recommendation algorithm trained with the first sample information and the second sample information, upon receiving a career and job recommendation request from a student account registered as an adolescent or college student on the career and job recommendation platform, analyzing the third attribute information registered in the student account based on the pre-stored career and job recommendation algorithm, and generating personalized guide information including the career path and job roles recommended to the adolescent or college student, and providing the personalized guide information to the student account (a personalized guide provision section); and

When the generation of the personalized guide information is completed, through the pre-stored employment support service recommendation algorithm, analyzing the correlation among the detailed information contained in the personalized guide information and generating employment linkage service information for the job recommended for job selection for the adolescent or college student, and providing the employment linkage

service information to the student account (an employment linkage information provision section).

【Claim 13】

A computer-readable recording medium, the computer-readable recording medium storing instructions that, when executed by a computing device, cause the computing device to perform the following steps:

When the first attribute information registered in a plurality of college student accounts of the college student members of a career and job recommendation platform for recommending career paths and job roles to adolescents and college students is received in real time, analyzing the first attribute information based on a pre-stored first artificial intelligence algorithm, and generating first sample information used when recommending career paths and job roles to the adolescents and college students through the analysis results (a college student-based sample generation step);

While the function of the college student-based sample generation step is being performed, when the second attribute information registered in a plurality of employee accounts of the working professional members of the career and job recommendation platform is received in real time, analyzing the second attribute information based on a pre-stored second artificial intelligence algorithm, and generating second sample information

used when recommending career paths and job roles to the adolescents and college students through the analysis results (an employee-based sample generation step);

When the generation of the first sample information and the second sample information is completed, with the pre-stored career and job recommendation algorithm trained with the first sample information and the second sample information, upon receiving a career and job recommendation request from a student account registered as an adolescent or college student on the career and job recommendation platform, analyzing the third attribute information registered in the student account based on the pre-stored career and job recommendation algorithm, and generating personalized guide information including the career path and job roles recommended to the adolescent or college student, and providing the personalized guide information to the student account (a personalized guide provision step); and

When the generation of the personalized guide information is completed, through the pre-stored employment support service recommendation algorithm, analyzing the correlation among the detailed information contained in the personalized guide information and generating employment linkage service information for the job recommended for job selection for the adolescent or college student, and providing the employment linkage

service information to the student account (an employment linkage information provision step).

The computer-readable recording medium is characterized in that it causes the computing device to perform the above steps for recommending career paths and job roles to adolescents and college students.