Teaching Exploration of Pattern Analytics Course-Bridging the Distance Between Theory and Practice

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Abstract

This article is an exploration of the teaching and optimization reform project of computer technology application courses. According to the teaching status of a strong theoretical course, this paper takes the course of Pattern Analytics as an example to explore how to enhance students' understanding of theoretical knowledge, enthusiasm, and realization ability by increasing practice of theory-related practical projects in the real world.

Keywords: strong theoretical course, pattern analytics, increasing practice

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Introduction

Pattern Analytics is the first critical processing step taken by all intelligent systems to extract meaningful information from complex sensor data. Pattern Analytics comes from statistics and focuses on the study of data classification methods (Theodoridis & Koutroumbas, 2006). Pattern Analytics is inextricably linked to many other computer research fields, such as machine learning (Bishop, 2006), image processing (Gonzalez & Woods, 2009), computer vision (Zhang, 2016), etc., and is closely related to many high-tech fields such as artificial intelligence, video and image identity Identification and medical image-aided diagnosis, etc. (Richard. et al., 2000). Therefore, Pattern Analytics has become a compulsory course for graduate students majoring in computer science in most colleges and universities internationally. The teaching quality of the courses closely related to high-tech industries, represented by Pattern Analytics, directly affects the quality of training high-tech talents and determines whether these high-tech talents could quickly adapt to industrial production and apply theories to practice in industries. The main content of this paper is to reform the traditional teaching mode of the Pattern Analytics course by transforming this almost purely theoretical course into one theory and practice balanced course and increasing practical projects close to high-tech industrial production. This largely increases students' enthusiasm for solving practical problems and then enhances their understanding abilities to course theories.

Analysis of the Present Situation of Teaching Pattern Analytics Course

There are many problems in traditional course teaching of Pattern Analytics (Liu. et al., 2011). First of all, the traditional teaching of the Pattern Analytics course is mostly theoretical. The methods of Pattern Analytics involve a large number of statistical principles and mathematical derivations. The teaching of the Pattern Analytics course can easily become the teaching of one mathematics course. It is filled with a large number of mathematical formulas and the content is abstract, which makes it difficult for students to understand and may make them feel daunted. Second, the proportion of experiments in traditional Pattern Analytics courses is very low. Students generally regard the experimental class as extra time for the theoretical class, and couldn't complete the "implementation" of the theory. Over time, this