PGT Exam Performance Feedback 2018/2019 Semester 1

COMP61021   Modelling and visualization of high-dimensional data   Ke Chen

Comments   Almost all the students attempted all the questions in two sections. Overall, their marks are roughly subject to a normal distribution.

For multiple choice questions in Sect. A, the averaging mark of this section is around 63.7% with standard deviation of 10.3% overall. Apart from three hard questions (less than 30% students gave the correct answers to those questions), the mistakes made seem diversified across the remaining questions. All those three hard questions are related to the important concepts on dimensionality reduction and the nature of those manifold learning algorithms delivered in this course unit. Nevertheless, the performance in this section suggests that most of students master the essentials of this course unit as expected.

Regarding Sect. B, most of students generally performed well for question B.1 and B.2, two questions regarding the book knowledge and those answers can be found directly from the lecture notes. A common mistake spotted for Question B.1 is that quite a few students missed an important property of the diagonal matrix in SVD; i.e., the shared eigenvalues appearing in diagonal elements are already sorted from the largest to the smallest. For Question B.2, several students did not know the distance metric used to define the neighbourhood of a neuron and quite a few failed to give the correct answer to how a U-matrix is achieved. Regarding the formal analysis question in B.3, most of students made an attempt. While I can see quite a few seemed to know (remember) the utility function for obtaining the first principal component on a data matrix, only few could make an extension of this utility function to the one for the second principal component and complete a correct proof based on the extension. Overall, the performance on this formal analysis question was poor but reasonable since this question requires the solid formal analysis skills and transferable knowledge, a goal set for only those very much top-tier students.
In summary, the overall performance this year appears to be better than that in last year although there were an unprecedented number of students registered to this course unit this year. It is worth mentioning that the distribution of examination marks looks quite consistent with that of the lab coursework assessment although the performance in examination is considerably poorer than that in coursework.