Long Questions

1. What is the definition of Data Science, and how does it differ from traditional statistical analysis?

2. What is the current landscape of perspectives surrounding Data Science, and how does it impact its practice?

3. What is statistical inference, and how does it relate to Data Science?

4. What is overfitting in the context of statistical modeling, and how can it be addressed?

5. How does the concept of datafication contribute to the growth and evolution of Data Science?

6. What are the basic principles of statistical modeling, and how are they applied in Data Science?

7. How does the concept of probability distributions contribute to statistical modeling and inference in Data Science?

8. What are some common challenges associated with fitting a statistical model to data, and how can they be addressed?

9. What is R, and how is it used in Data Science?

10. What are the key steps involved in setting up the R environment for data analysis?

11. What is the significance of understanding populations and samples in the context of statistical analysis?

12. What role does statistical modeling play in Data Science, and how does it contribute to knowledge discovery and decision-making?

13. How does Bayesian parameter estimation differ from traditional frequentist estimation methods, and what are its advantages in Data Science?

14. What is language modeling, and how does it contribute to natural language processing (NLP) tasks?

15. How is language model evaluation performed, and what metrics are commonly used to assess the performance of language models?

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61. What are vectors in the context of data science?

62. How are matrices created and named in data science?

63. What is a factor, and how is it used in data science?

64. What is a data frame, and how is it utilized in data science?

65. What are lists, and how are they employed in data science?

66. How can you create and name vectors in R?

67. What are the essential arithmetic operations that can be performed on vectors?

68. What techniques can be used for sub-setting vectors in R?

69. How can matrices be subsetted in R?

71. What are factors in R, and how are they useful in data analysis?

72. How can factors be manipulated and transformed in R?

73. What is a data frame, and how does it differ from a matrix in R?

74. How can you create a data frame in R, and what are its components?

75. What are the different methods for subsetting data frames in R?