1. What is the difference between supervised learning and unsupervised learning in machine learning?

2. How does a convolutional neural network differ from a recurrent neural network?

3. Explain the concept of overfitting in machine learning and how it can be mitigated.

4. What are some common optimization algorithms used in training neural networks?

5. Describe the process of tokenization in natural language processing (NLP) and its importance.

6. What is the role of activation functions in neural networks?

7. How does reinforcement learning differ from supervised and unsupervised learning?

8. What are some key considerations when designing an AI system for real-time applications?

9. Discuss the importance of version control systems like Git in software development.

10. Explain the difference between agile and waterfall methodologies in software development.

11. What are the advantages and disadvantages of using microservices architecture?

12. How do you handle dependencies in a software project?

13. What is continuous integration (CI) and continuous deployment (CD) in the context of software development?

14. Describe the concept of design patterns and provide examples of some commonly used patterns.

15. How do you ensure the security of a software application during development?

16. What is the importance of unit testing and integration testing in software development?

17. Explain the concept of Docker containers and their role in software deployment.

18. How can you optimize the performance of a web application?

19. Discuss the role of DevOps in modern software development practices.

20. What ethical considerations should be taken into account when developing AI systems?