Automatic Differentiation, Adjoints, and Sensitivities

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Automatic Differentiation Primitive Rules

1. Scalar Addition Pushforward/Jvp rule

2. Scalar Addition Pullback/vJp rule

3. Scalar Multiplication Pushforward/Jvp rule

4. Scalar Multiplication Pullback/vJp rule

5. Scalar Sine Pushforward/Jvp rule

6. Scalar Sine Pullback/vJp rule

7. Broadcasted Function Pushforward/Jvp rule

8. Broadcasted Function Pullback/vJp rule

9. Matrix-Vector product Pushforward/Jvp rule

10. Matrix-Vector product Pullback/vJp rule

11. Scalar Root-Finding Pushforward/Jvp rule

12. Scalar Root-Finding Pullback/vJp rule

13. Matrix-Matrix Product Pushforward/Jvp rule

14. Matrix-Matrix Product Pullback/vJp rule

15. L2 Loss (Least Squares) Pushforward/Jvp rule

16. L2 Loss (Least Squares) Pullback/vJp rule

17. Nonlinear System Solve Pushforward/Jvp rule

18. Nonlinear System Solve Pullback/vJp rule

19. Linear System Solve Pushforward/Jvp rule

20. Linear System Solve Pullback/vJp rule

21. Neural ODEs Pushforward/Jvp rule

22. Neural ODE Pullback/vJp/adjoint rule

23. Softmax Pushforward/Jvp rule

24. Softmax Pullback/vJp rule