

Title

Subtitle

Name Surname*

Institution

This version: October 6, 2025

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Introduction

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Presentation Roadmap

① Introduction

② Section A

③ Section B

④ Section C

⑤ Conclusion

Slide in Section A

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Slide in Section A

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Slide in Section A

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Presentation Roadmap

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Slide in Section B

► Click for **Table 1**:

	A
B	AB

Table 1: Caption for Table 1

Presentation Roadmap

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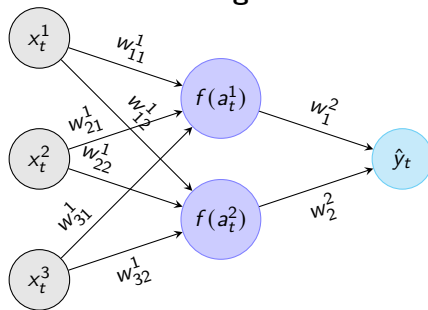
④ Section C

⑤ Conclusion

Slide in Section C

- ▶ **Data:** 4 variables x_t^1, x_t^2, x_t^3, y_t
- ▶ **Goal:** Predict y_t from $X \equiv x_t^1, x_t^2, x_t^3$
- ▶ **Example:** 2 layers, 2 “hidden” nodes
- ▶ From X_t to \hat{y}_t for observation $t \in T$:
 - Linearly combine $x_t^1, x_t^2, x_t^3 \rightarrow a_t^1, a_t^2$
 - f is a non-linear function
 - \hat{y}_t is predicted output
- ▶ **Training** prediction error \rightarrow update weights w
- ▶ **Testing** prediction error \rightarrow update network structure

NN Figure



NN Matrix Algebra

$$\begin{bmatrix} x_t^1 & x_t^2 & x_t^3 \end{bmatrix} \begin{bmatrix} w_{11}^1 & w_{12}^1 \\ w_{21}^1 & w_{22}^1 \\ w_{31}^1 & w_{32}^1 \end{bmatrix} = \begin{bmatrix} a_t^1 & a_t^2 \end{bmatrix}$$

$$\begin{bmatrix} f(a_t^1) & f(a_t^2) \end{bmatrix} \begin{bmatrix} w_1^2 \\ w_2^2 \end{bmatrix} = \hat{y}_t$$

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Conclusion

▶ That's all

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References I

Surname, Name (2024). "Paper Title". Note.

Appendix

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