

Sequential Data

22 October 2022 13:09

$\text{ANN} \rightarrow \text{tabular data}$

$\text{CNN} \rightarrow \text{images}$

$\left\{ \begin{array}{l} \text{RNN} \rightarrow \text{Recurrent NN} \\ \text{is type of sequential model} \\ \text{to work on sequential data} \end{array} \right\}$

iq marks gender			placement
19	0	0	No
marks ↴	0	0	does not matter
gender.	0	0	0

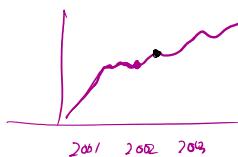
$\xrightarrow{\text{RNN}} \boxed{\text{NLP}}$

$\xrightarrow{\text{ML}}$

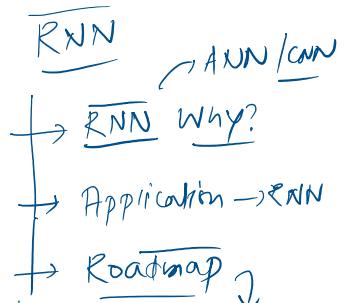
$\rightsquigarrow \text{eg} \rightarrow \underline{\text{text}} \rightarrow \text{sequential data}$

$\underline{\text{hi}} \underline{\text{my}} \underline{\text{name}} \underline{\text{is}} \underline{\text{Nitish}}$

Time series



sequential



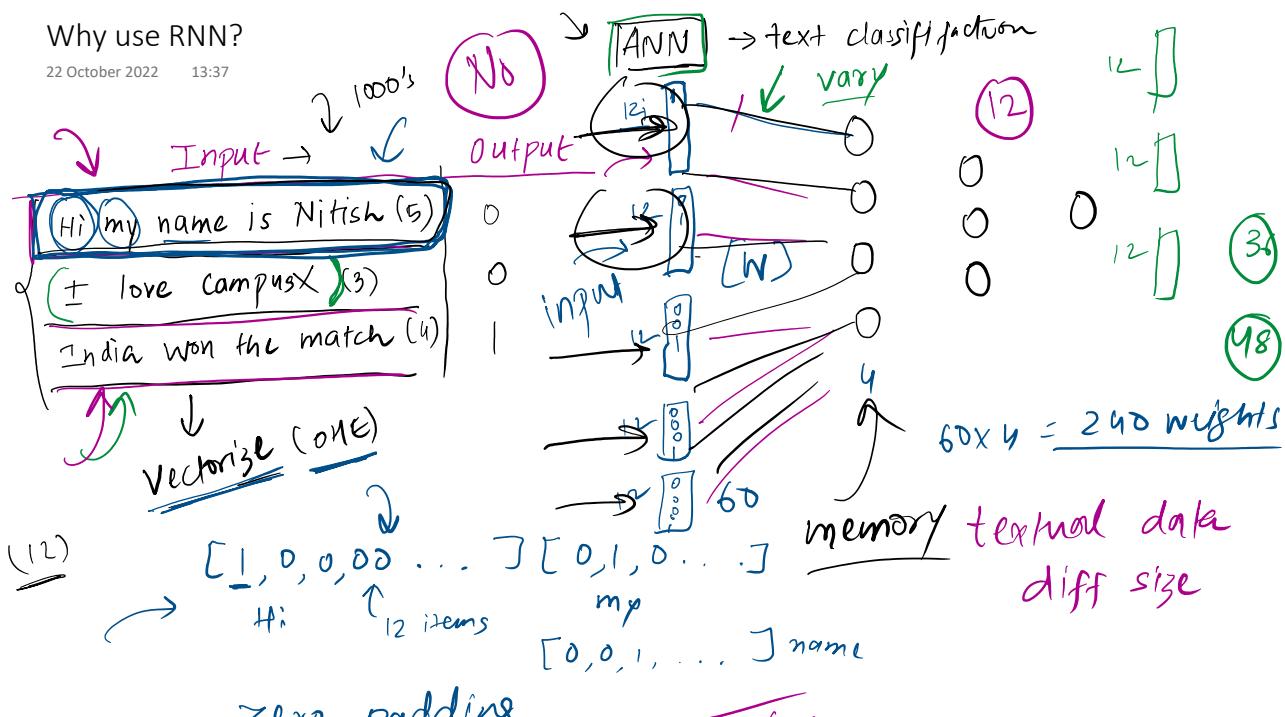
Speech

$\xrightarrow{\text{sequential}}$

$\boxed{\text{DNA sequence}}$

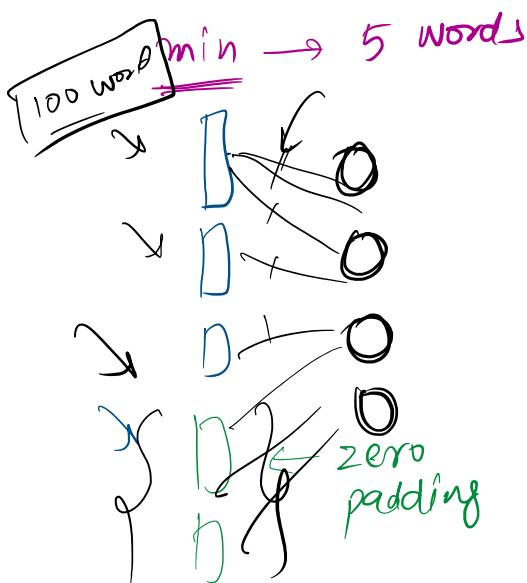
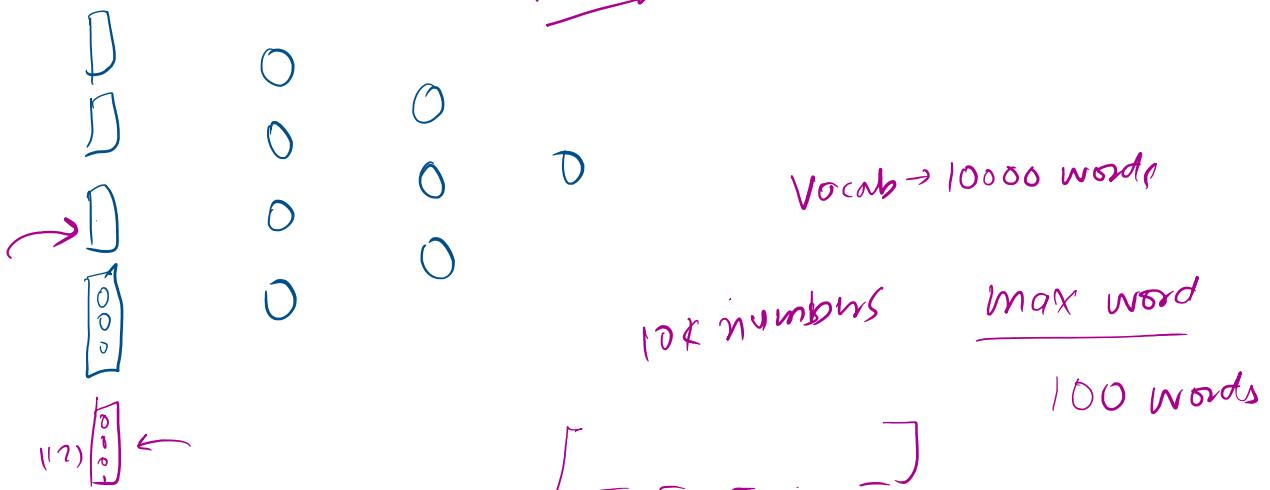
Why use RNN?

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zero padding

varying

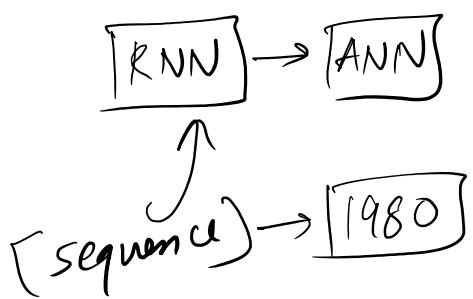


unnecessary
computation

prediction
↓
200 words

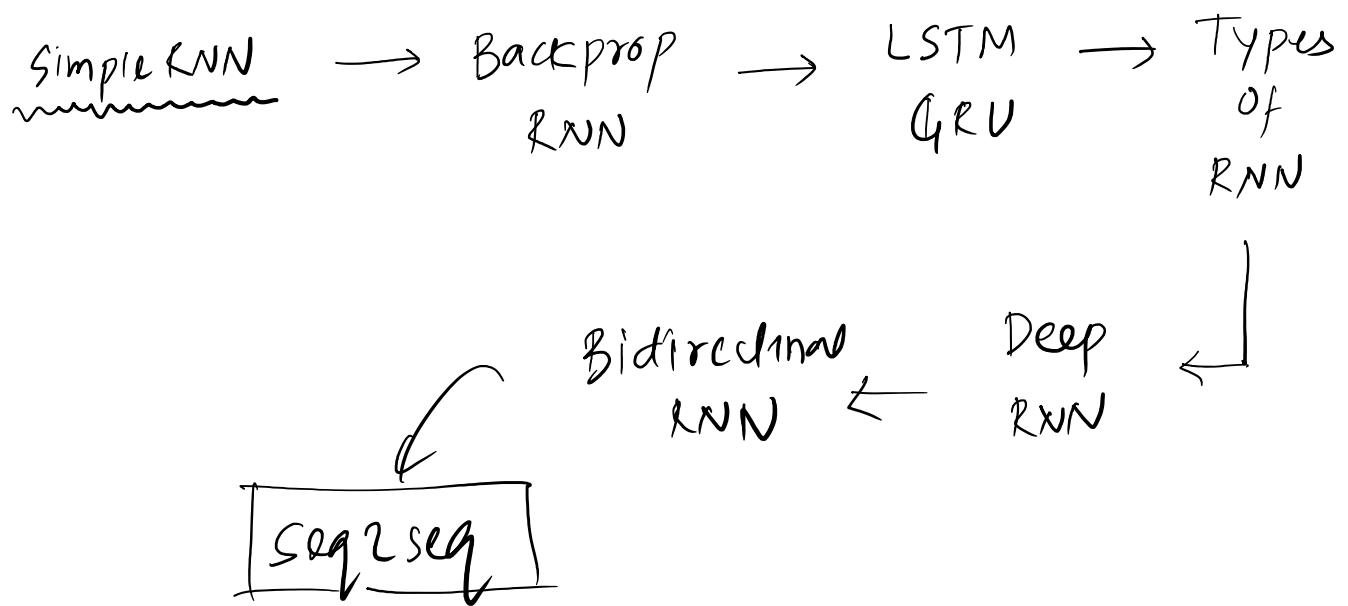
n .. tool indent → varying size

- 1) text input → varying size
- 2) zero padding → unnecessary computation
- 3) Prediction problem
- 4) Totally disregarding the sequence info



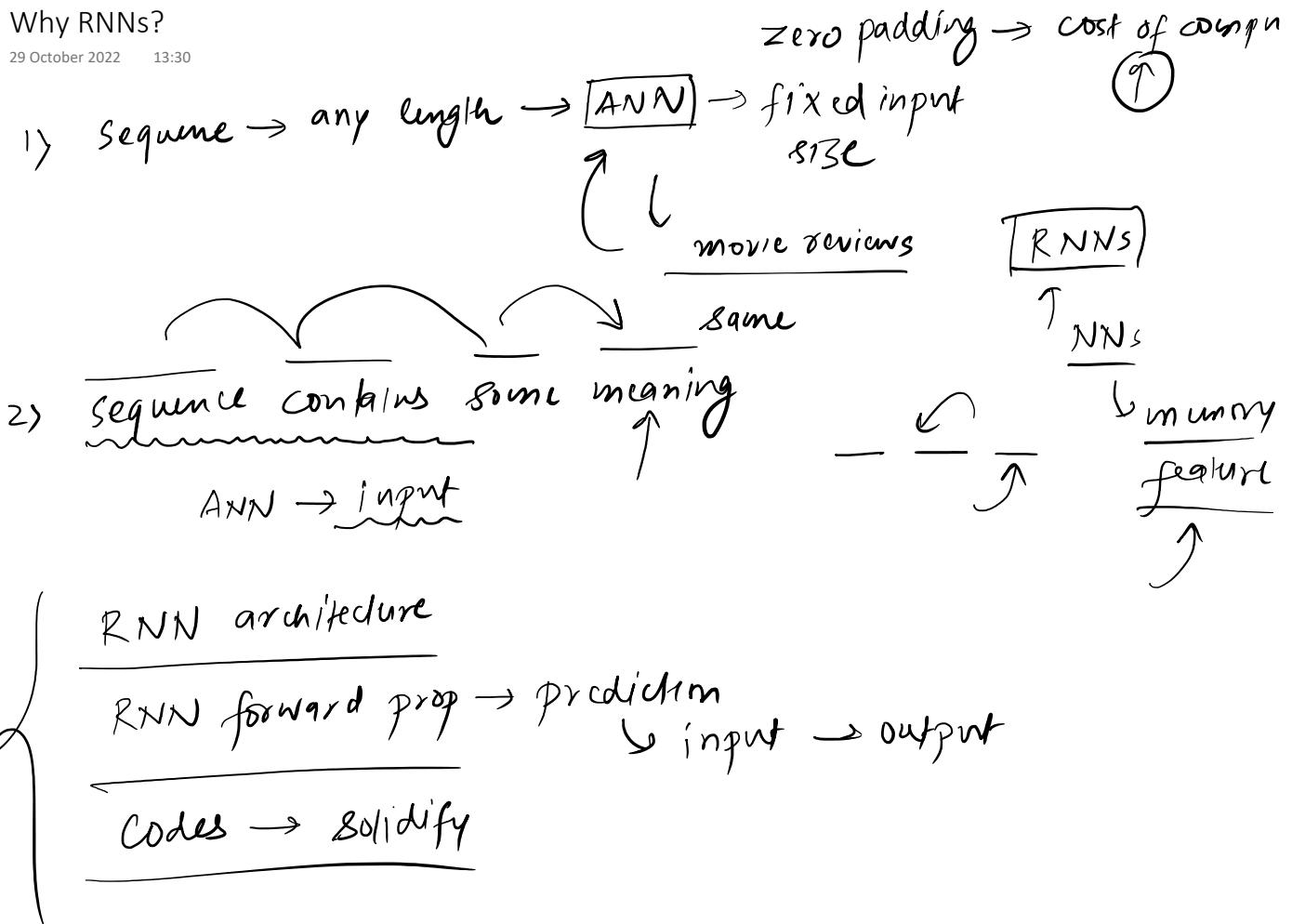
Roadmap

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Why RNNs?

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Data for RNN

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