Depth in Multi-headed Recurrent Neural Networks

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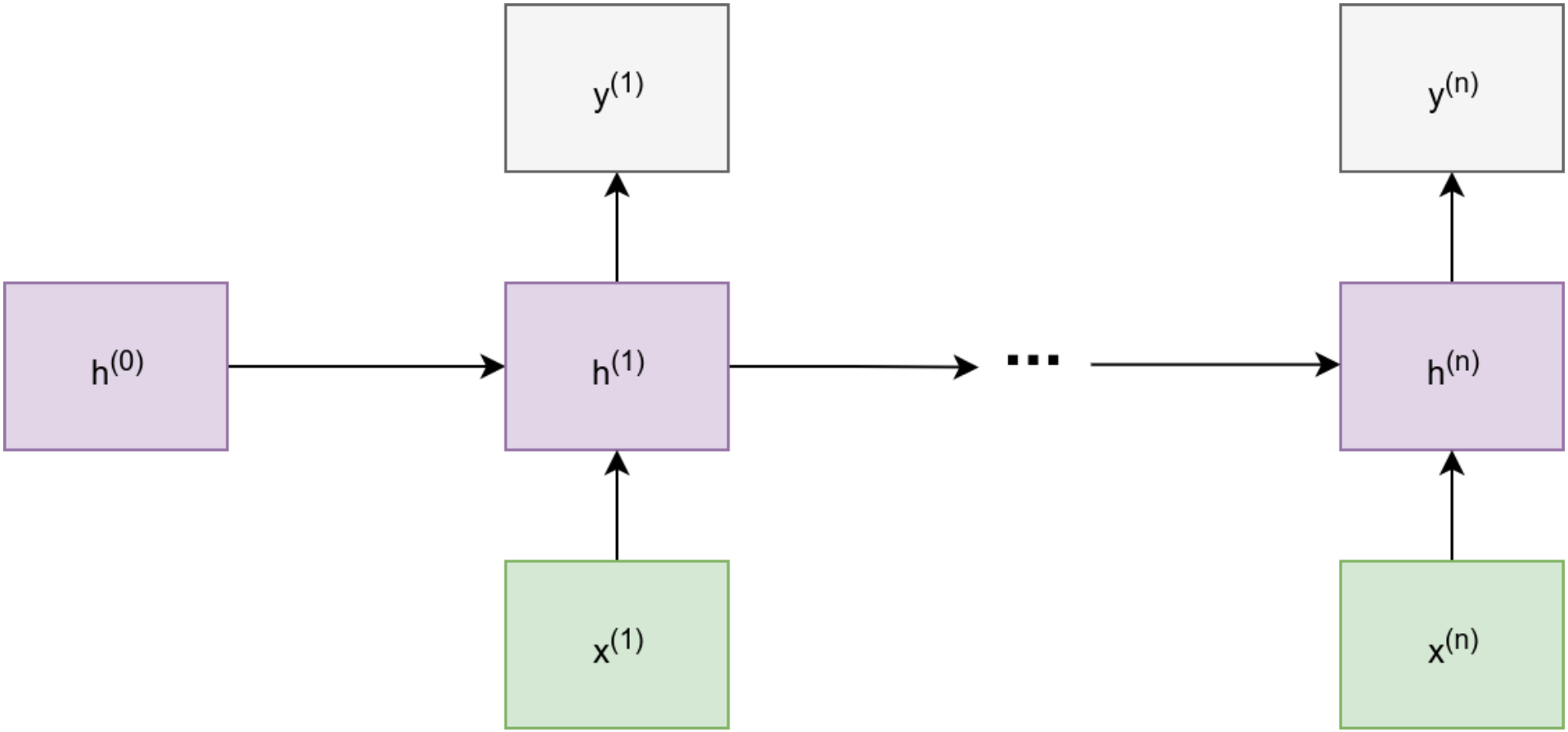
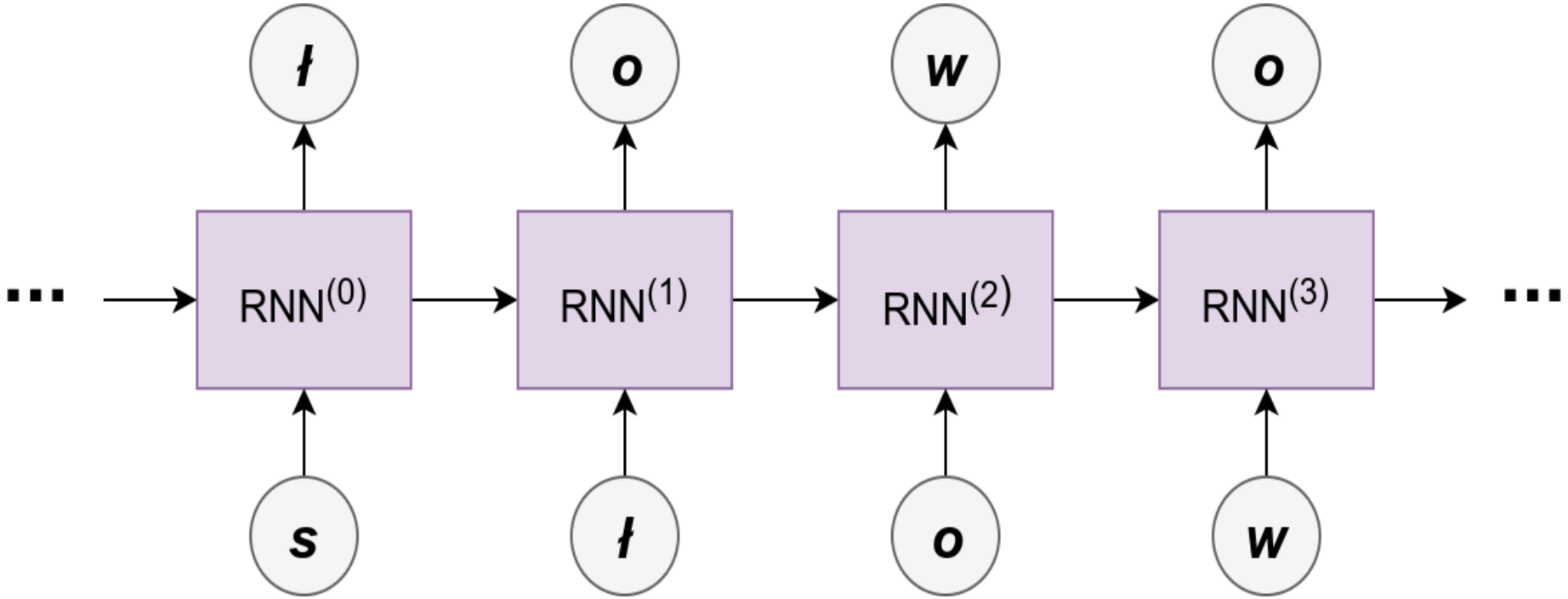
Authorship identification problem

- Problem
  - Having a set of text of a given author and a text written reportedly by this author, decide whether he really authored this text
- Solution
  - Recurrent Neural Networks
  - Deep architectures are very promising

Shallow Recurrent Neural Network



Language Model



Multi-headed RNN vs authorship identification

- Each head represents one author
- The network is trained on texts of all authors
- For each text we obtain as many scores as the network has heads
- The head corresponding to the true author should obtain the highest score

Multi-headed Recurrent Neural Network