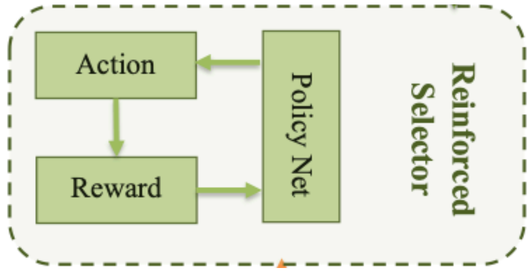
Methodology

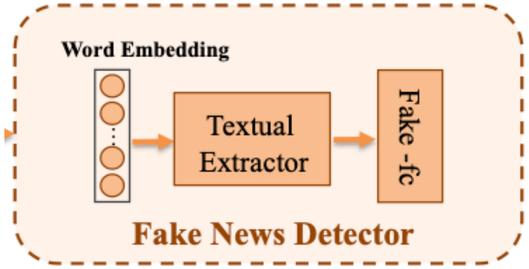
Data Selection via Reinforcement Learning



- For every sample, the *action* of reinforced data selector is to *retain* or *remove*.
- The decision of the current sample $x_i^{(k)}$ is based on its *state* vector and all previous decisions of samples $\{x_1^{(k)}, x_2^{(k)}, \cdots, x_{i-1}^{(k)}\}$
- The data selection problem can be naturally cast as a Markov Decision Process (MDP)
- Since the goal of data selection is to improve the performance of fake news detection, directly use the performance (accuracy) changes of fake news detection as the *reward* for reinforced selector

Methodology

Fake news detector



- Consists of a textual feature extractor and a fully-connected layer, namely Fake-fc
- Input: news content
- Output: the probability of the given news being fake
- $D_n\left(\cdot;\theta_n\right)$, θ_n: all the parameters