Methodology......
Fusion Sub-network

- Loss function

  - $L = - \sum [y \log p + (1 - y) \, log(1 - p)]$

  - y: ground truth: 1= fake-news images, 0 = real news images

  - p: predicted probability of being fake-news images

Experiments.
Dataset

- **Weibo dataset**

- Fake news posts: 2012.05 ~ 2016.01 verified by Weibo official rumor debunking system

- Real news posts: 2012.05 ~ 2016.01 from Weibo verified by Xinhua News Agency

  - removed duplicated and very small images

  - text-only posts are removed and only one image is saved for posts

- In total, this dataset includes <u>4749 fake news posts and 4779 real news posts</u>

- First use K-means algorithm to cluster all news into 200 clusters, and split whole dataset into **training set : validation set : testing set = 7:1:2**