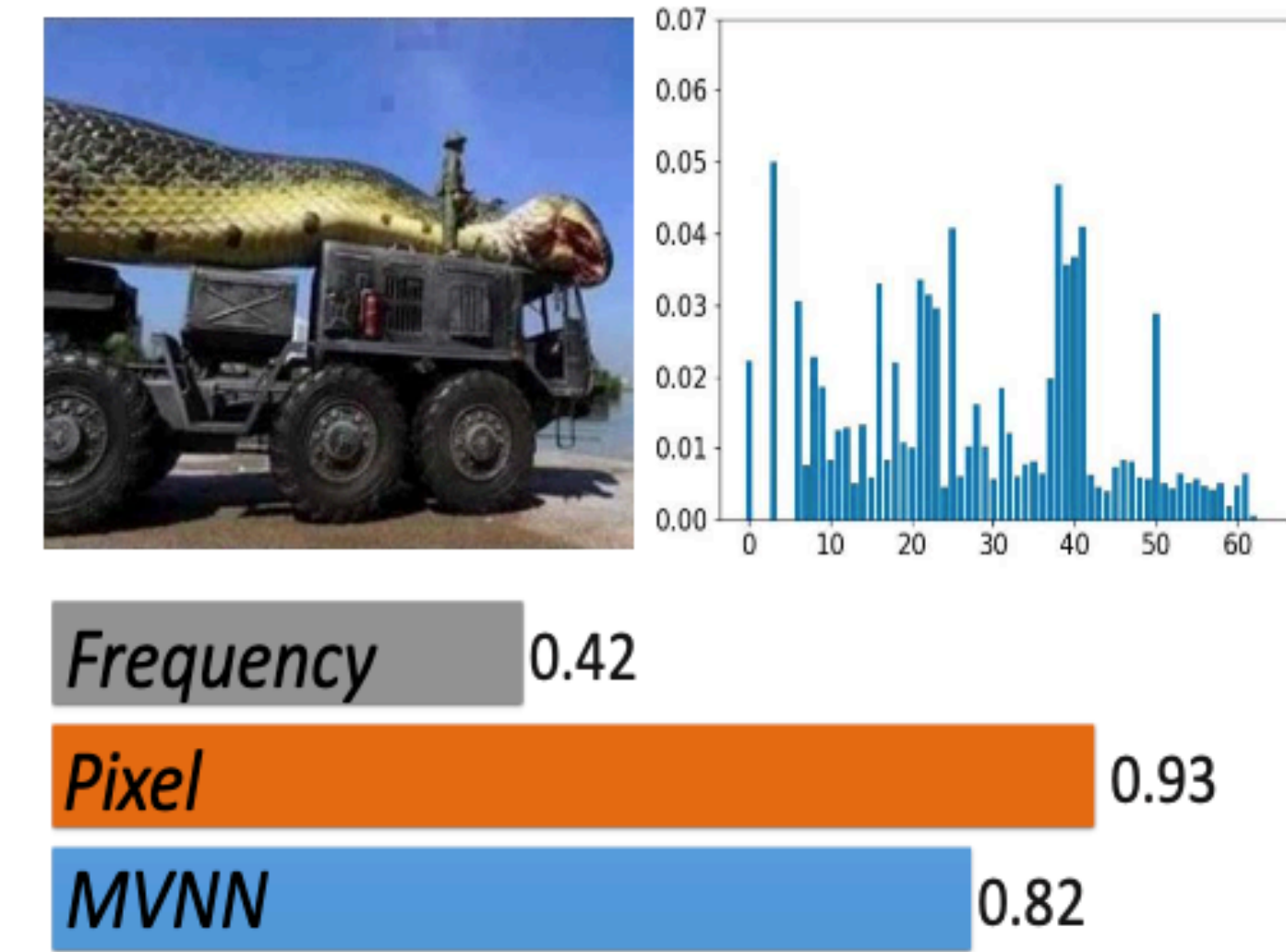
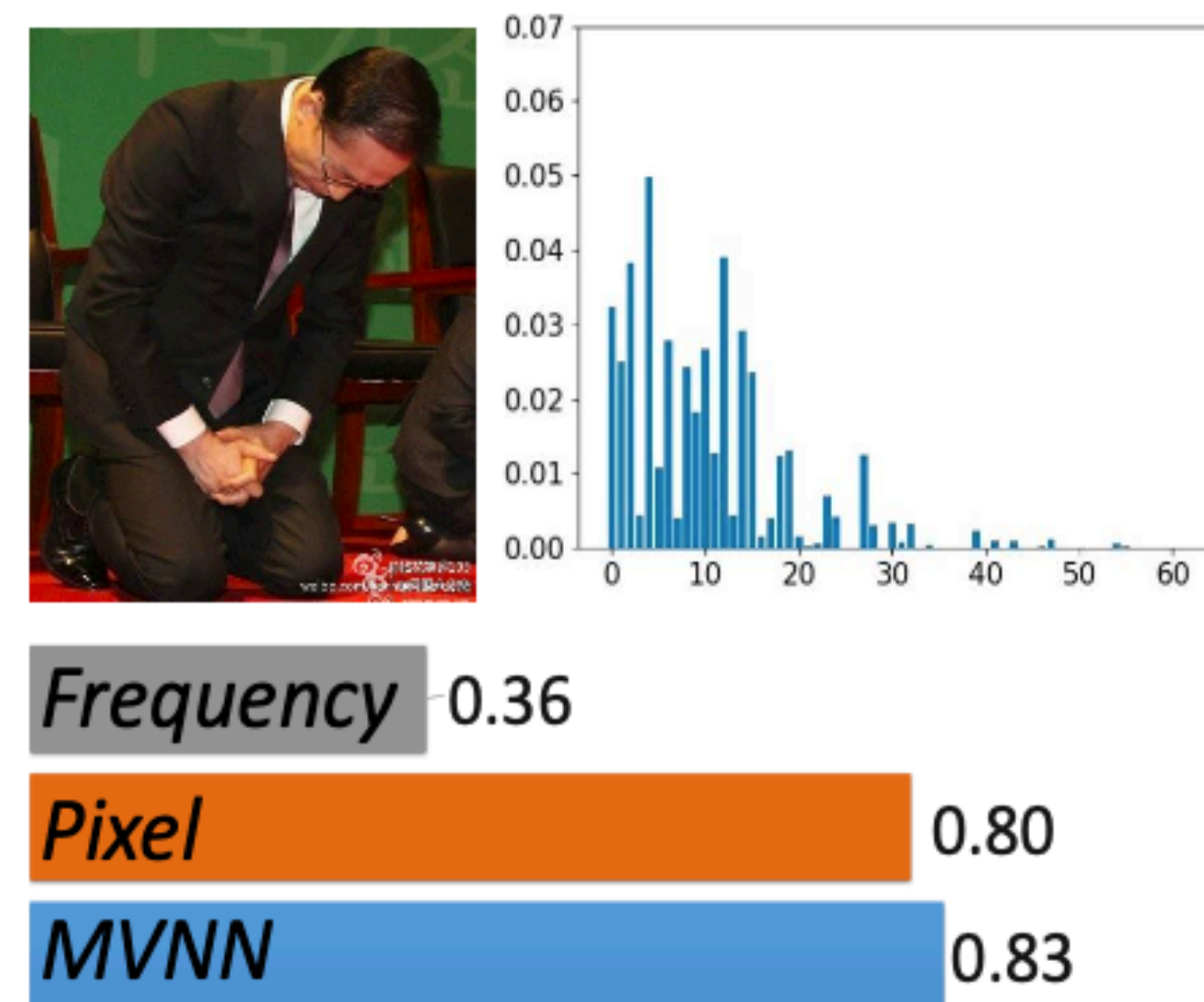


Case Studies

captured by MVNN

but missed by frequency domain



- **Frequency:** histograms in Fig show little evidence of fake news
- **Pixel:** the image contents are eye-attracting and rather dubious
- By combining the information of the frequency and pixel domain, MVNN can easily detect that this is a fake-news image with high confidence.

Conclusions and Contribution

- Propose a framework MVNN to model the visual contents for fake news detection
 - exploits an end-to-end neural network to learn representations of frequency and pixel domains **simultaneously and effectively fuse them**
- Experiments conducted on Weibo dataset validate the effectiveness of MVNN, The results shows that MVNN is much better than existing methods.
- The visual representations learned by MVNN can help **improve the performance** of multi-modal fake news detection by a large margin.
- Proven the information of frequency and pixel domains are complementary