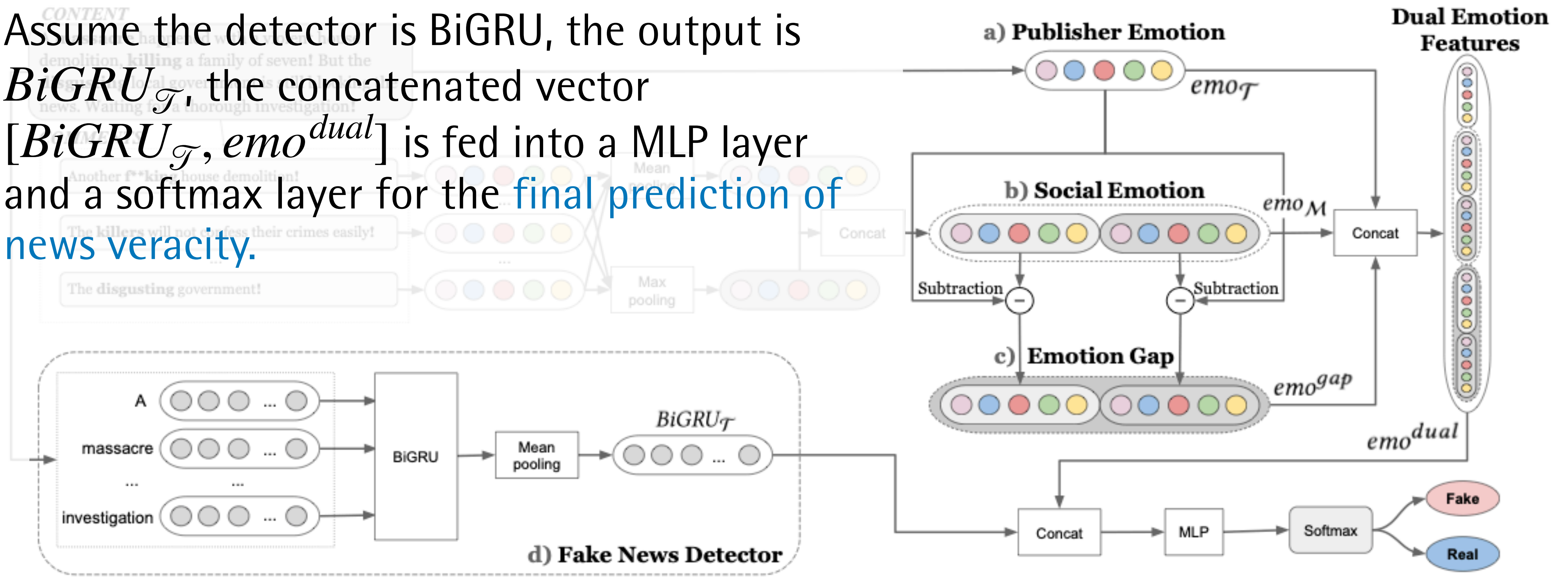


# Methodology

## Dual Emotion Features

- Assume the detector is BiGRU, the output is  $BiGRU_{\mathcal{T}}$ , the concatenated vector  $[BiGRU_{\mathcal{T}}, emo^{dual}]$  is fed into a MLP layer and a softmax layer for the final prediction of news veracity.



$$\hat{y} = \text{Softmax}(\text{MLP}([BiGRU_{\mathcal{T}}, emo^{dual}]))$$

# Experiments

## Datasets

- [RumourEval-19](#) (Twitter, Reddit)
- [Weibo-16](#) (2010.12-2014.04)
  - Deduplication on the subset of fake news based on a clustering algorithm based on text similarity.
- [Weibo-20](#) (2010.12-2018.11)
  - Further collect news from the same source with Weibo-20.

	Veracity	RumourEval-19		Weibo-16		Weibo-20	
		#pcs	#com	#pcs	# com	#pcs	#com
Training	Fake	79	1,135	801	649,673	1,896	749,141
	Real	144	1,905	1,410	482,226	1,920	516,795
	Unverified	104	1,838	-	-	-	-
	Total	327	4,878	2,211	1,131,899	3,816	1,265,936
Validating	Fake	19	824	268	222,149	632	137,941
	Real	10	404	470	146,948	640	185,087
	Unverified	9	212	-	-	-	-
	Total	38	1,440	738	369,097	1,272	323,028
Testing	Fake	40	689	286	193,740	633	245,216
	Real	31	805	471	179,942	641	149,260
	Unverified	10	181	-	-	-	-
	Total	81	1,675	757	373,682	1,274	394,476
Total	Fake	138	2,648	1,355	1,065,562	3,161	1,132,298
	Real	185	3,114	2,351	809,116	3,201	851,142
	Unverified	123	2,231	-	-	-	-
	Total	446	7,993	3,706	1,874,678	6,362	1,983,440