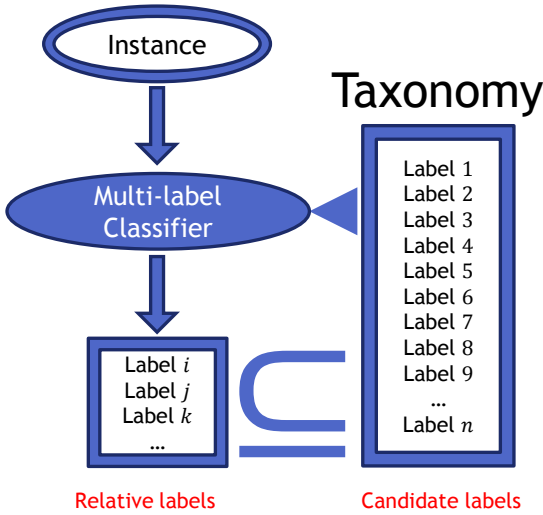
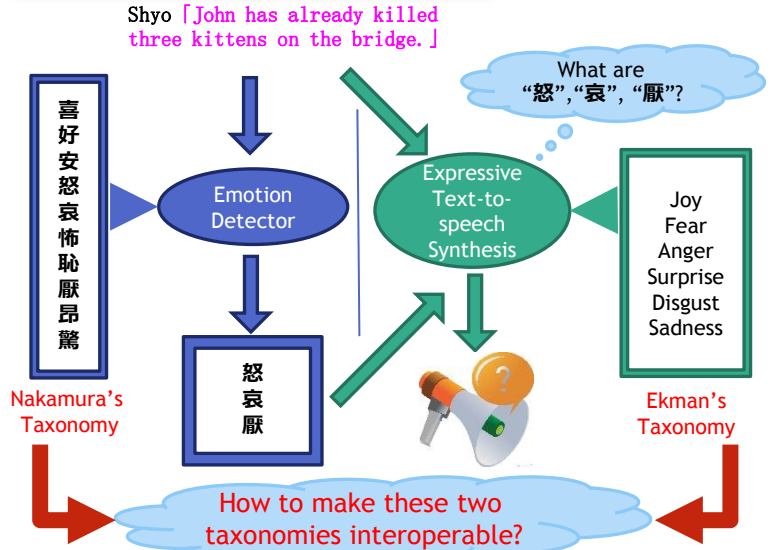


# Crowdsourced Semantic Matching of Multi-Label Annotations

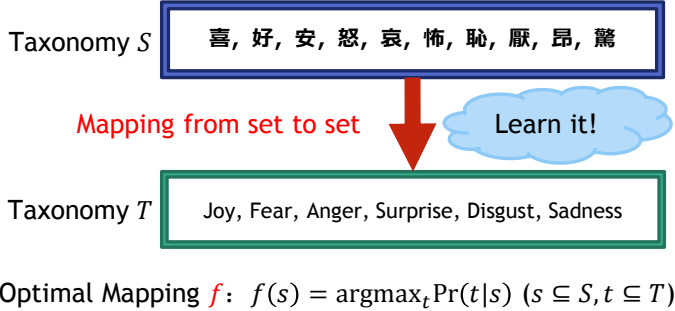
## Multi-label Learning



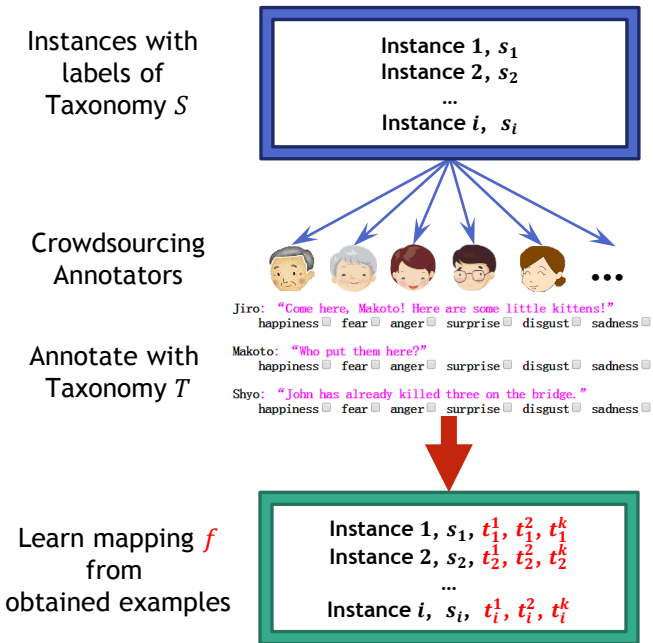
## Example: Emotion Detection



## Problem Definition

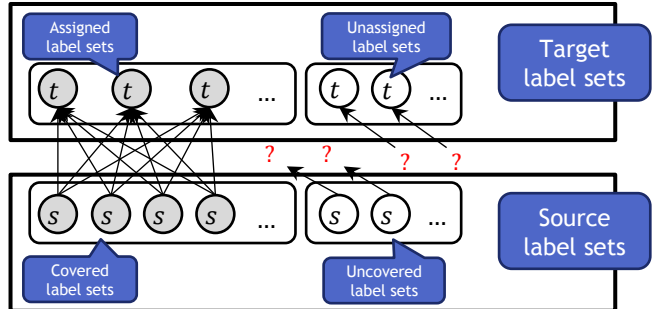


## Proposed Approach

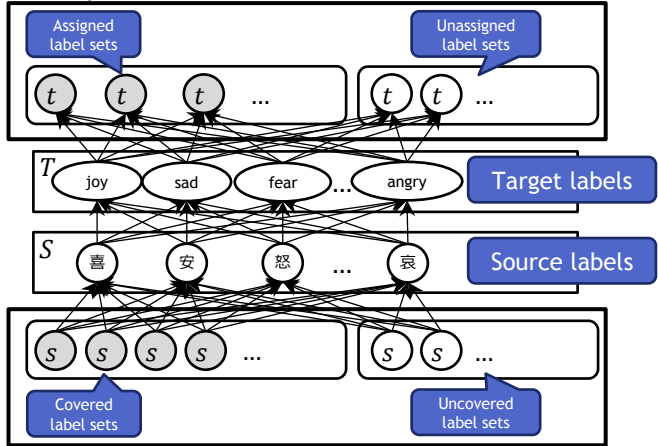


## Statistical Methods

### 1. Conventional method



### 2. Proposed cascaded method



Training story	Method	Ekman→Nakamura	Nakamura→Ekman
Although we are in love	Conventional	0.854	0.867
	Cascaded	0.860	0.868
	Cascaded + Bias	<b>0.906</b>	<b>0.907</b>
Little Masa and a red apple	Conventional	0.872	0.883
	Cascaded	0.882	0.896
	Cascaded + Bias	<b>0.903</b>	<b>0.912</b>