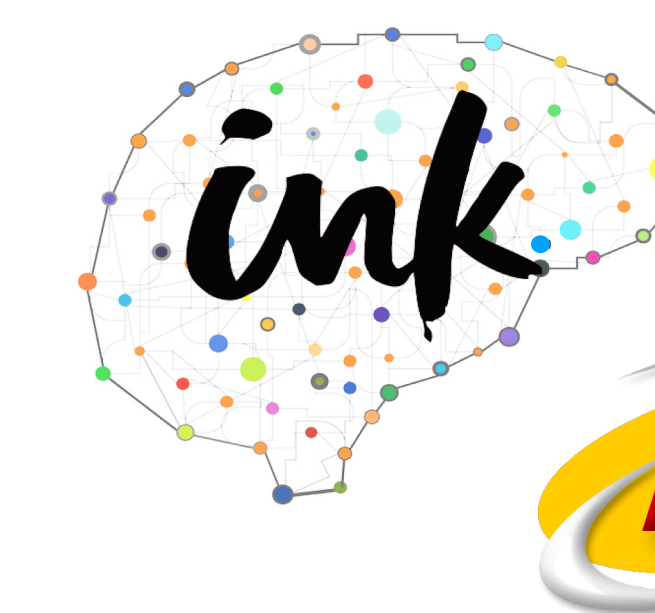


AlpacaTag: An Active Learning-based Crowd Annotation Framework for Sequence Tagging

Bill Yuchen Lin^{*1}, Dong-Ho Lee^{*1}, Frank F. Xu², Ouyu Lan¹, and Xiang Ren¹

¹ University of Southern California ² Carnegie Mellon University

<http://inklab.usc.edu/AlpacaTag>



Easy-to-use Intelligent Recommendations

PERpMISCmLOClo

Annotating section

Donald Trump had a dinner with Hillary Clinton in the white house .

Recommendation section

Donald Trump had a dinner with Hillary Clinton in the white house .

(a) the sentence and annotations are at the upper section; tagging suggestions are shown as underlined spans in the lower section.

PERpMISCmLOClo

Annotating section

Donald Trump had a dinner with Hillary Clinton in the white house .

Recommendation section

Donald Trump had a dinner with Hillary Clinton in the white house .

(b) after click on a suggested span, a floating window will show up near for confirming the types (suggested type is bounded with red line).

PERpMISCmLOClo

Annotating section

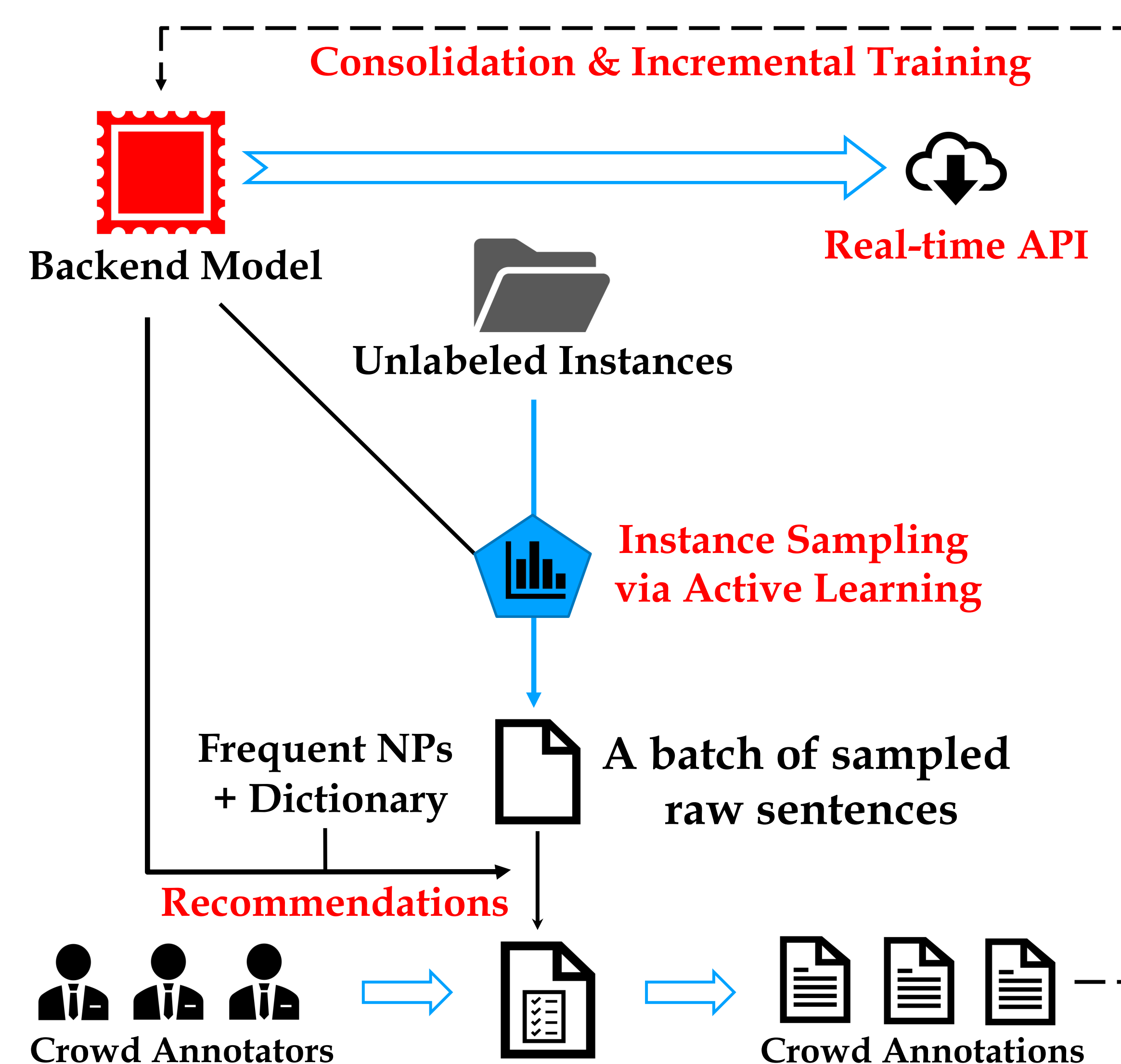
Donald Trump had a dinner with Hillary Clinton in the white house .

Recommendation section

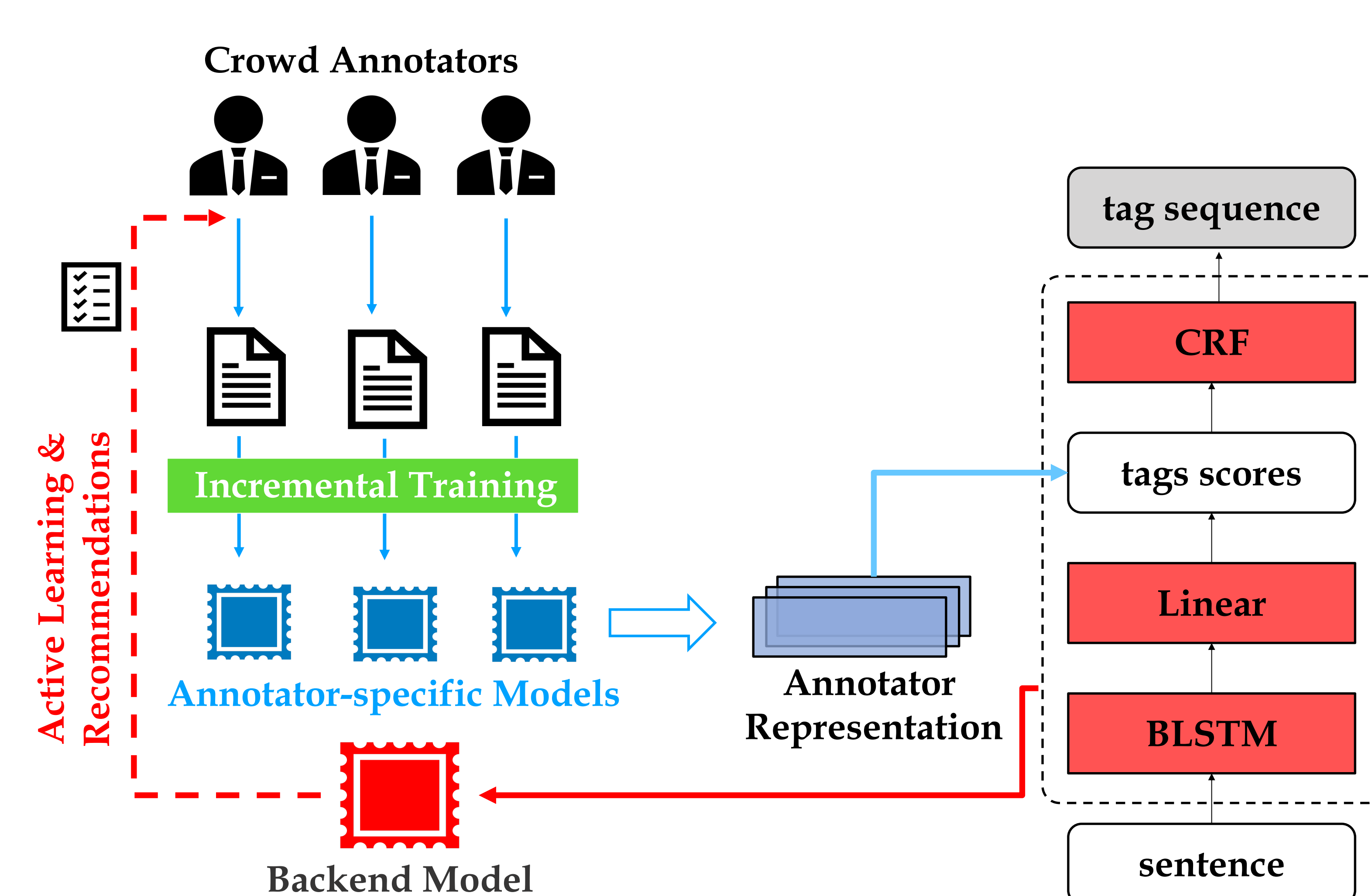
Donald Trump had a dinner with Hillary Clinton in the white house .

(c) after click a suggested type or press a shortcut key (e.g. 'p'), confirmed annotations will show up in the upper annotation section.

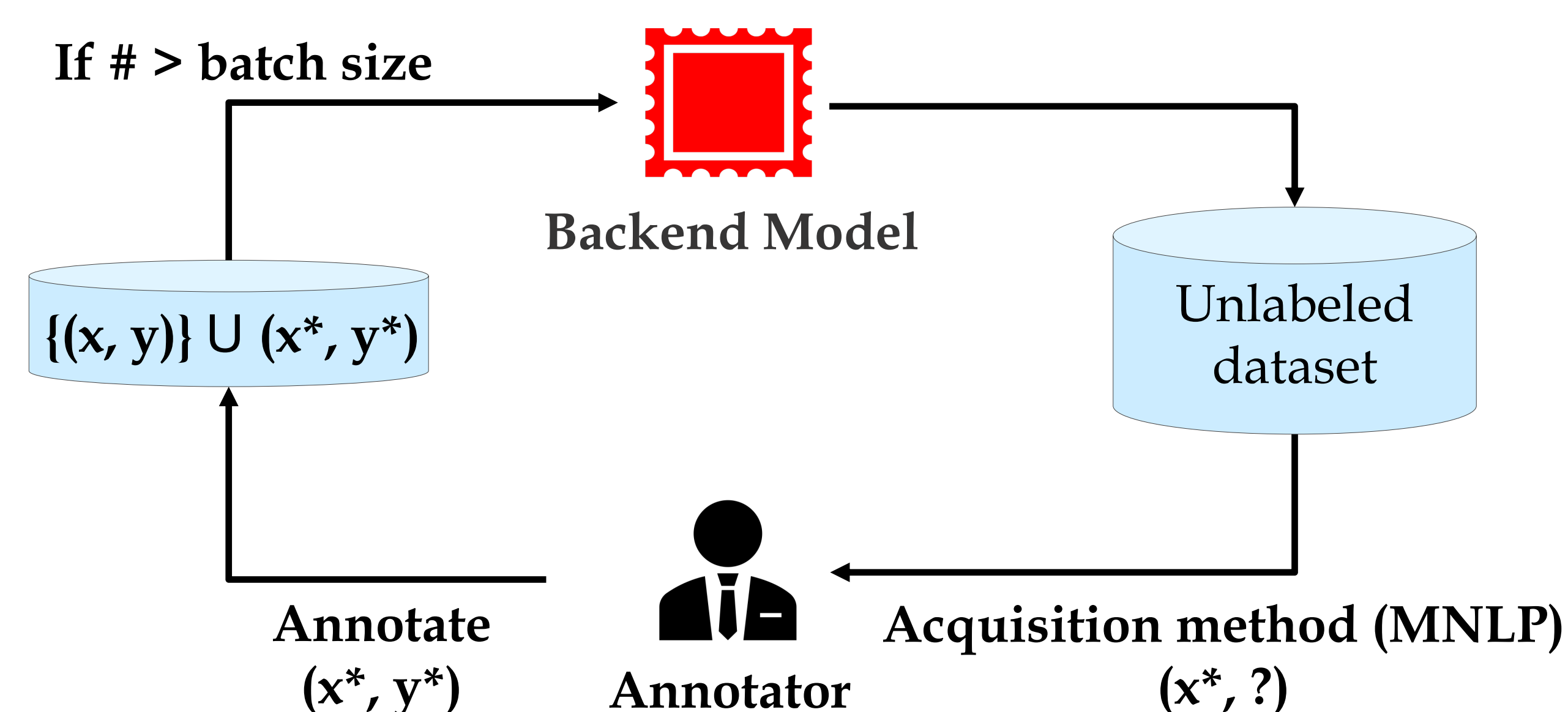
Overall Workflow of AlpacaTag



Learning Backend Model with Consolidation



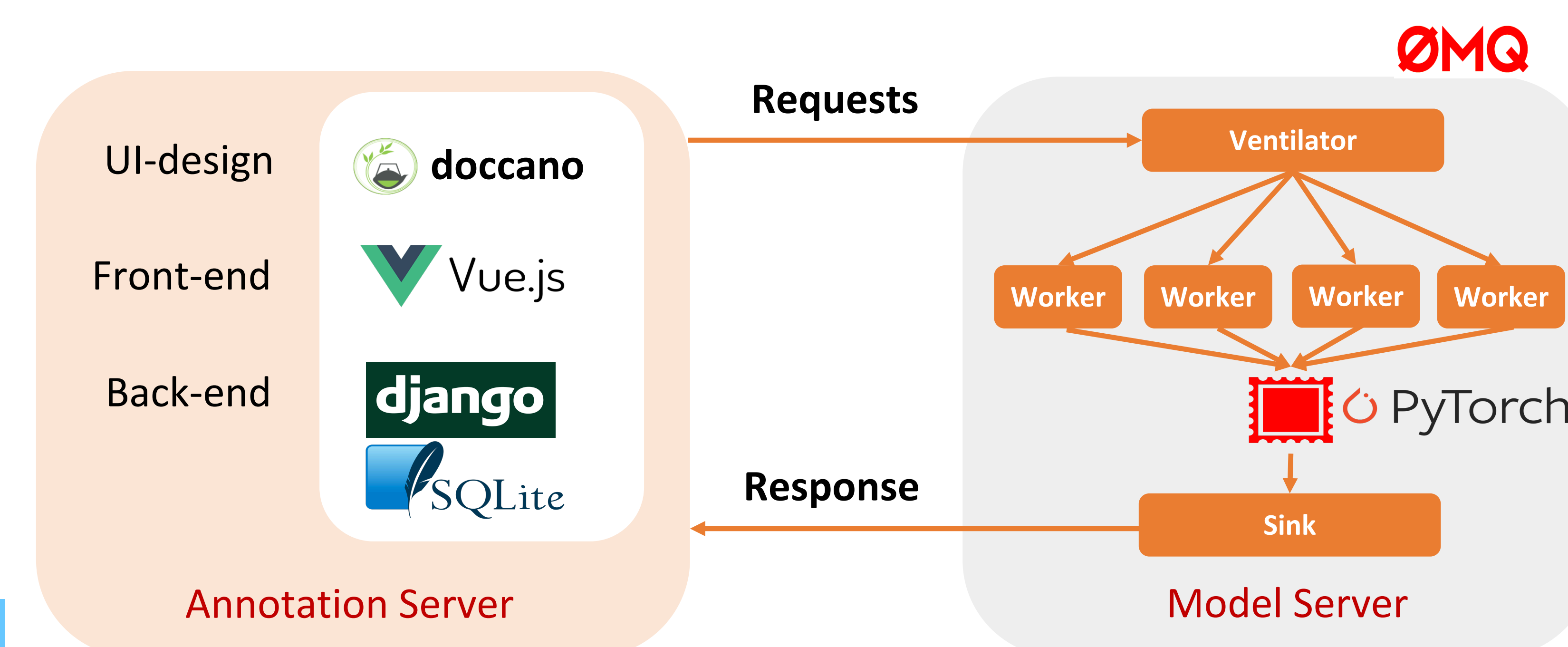
Active Learning for Instance Sampling



Key Features of the AlpacaTag Framework

- **Active Intelligent Recommendation**
Dynamically suggesting annotations and sampling the most informative unlabeled instances.
- **Annotation Consolidation**
Enhancing real-time inter-annotator agreement by consensus networks.
- **Real-time model deployment**
Users can deploy their models in downstream system.

Framework Implementations



Performance Evaluation

