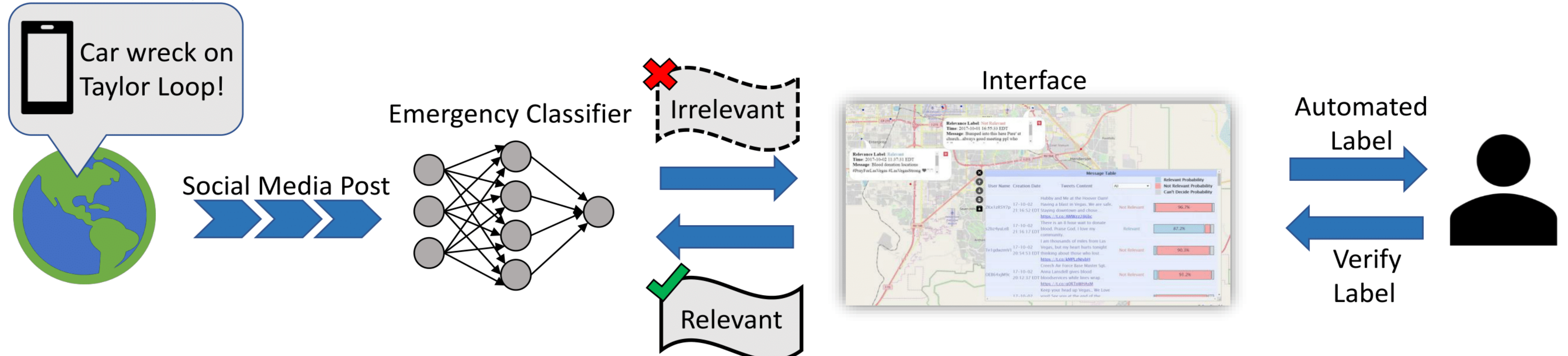


CERIAS

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Interactive Learning for Identifying Relevant Tweets to Support Real-time Situational Awareness

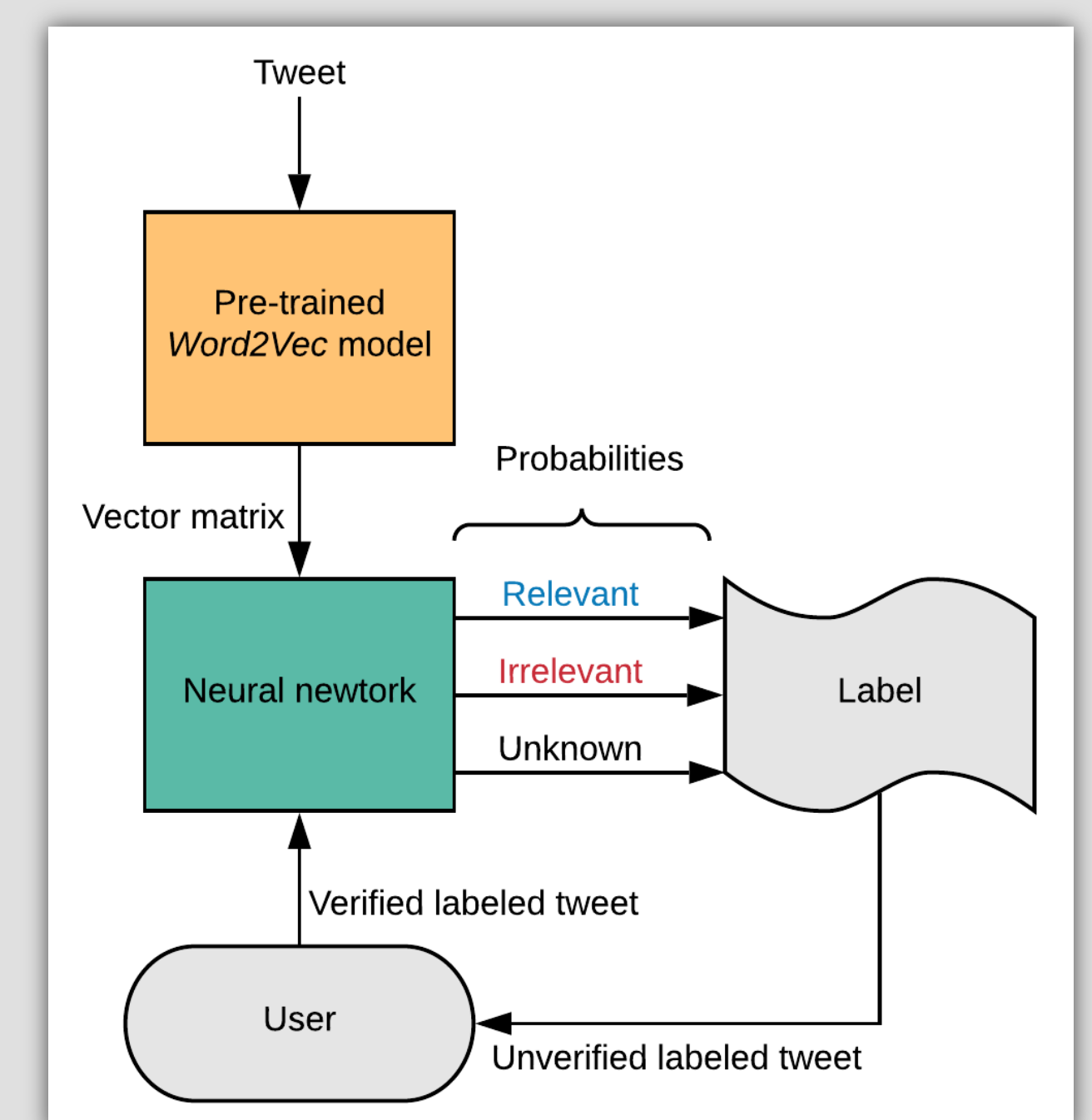
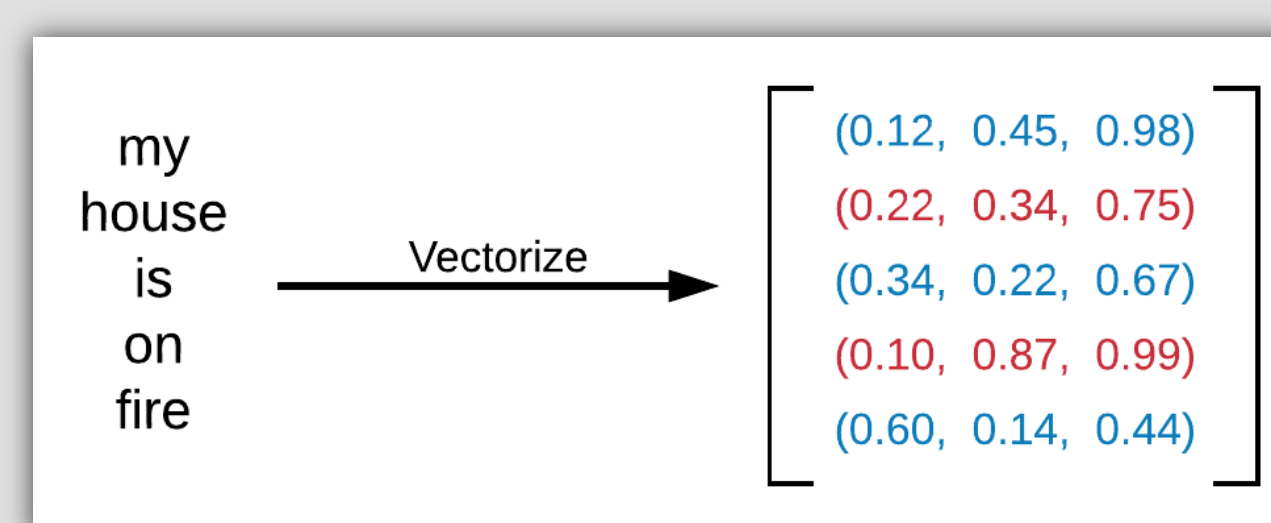
Luke S. Snyder, Yi-Shan Lin, Morteza Karimzadeh, Dan Goldwasser, and David S. Ebert



Objective: Enable first responders to quickly identify disaster-related social media information in real-time to facilitate situational awareness and crisis prevention.

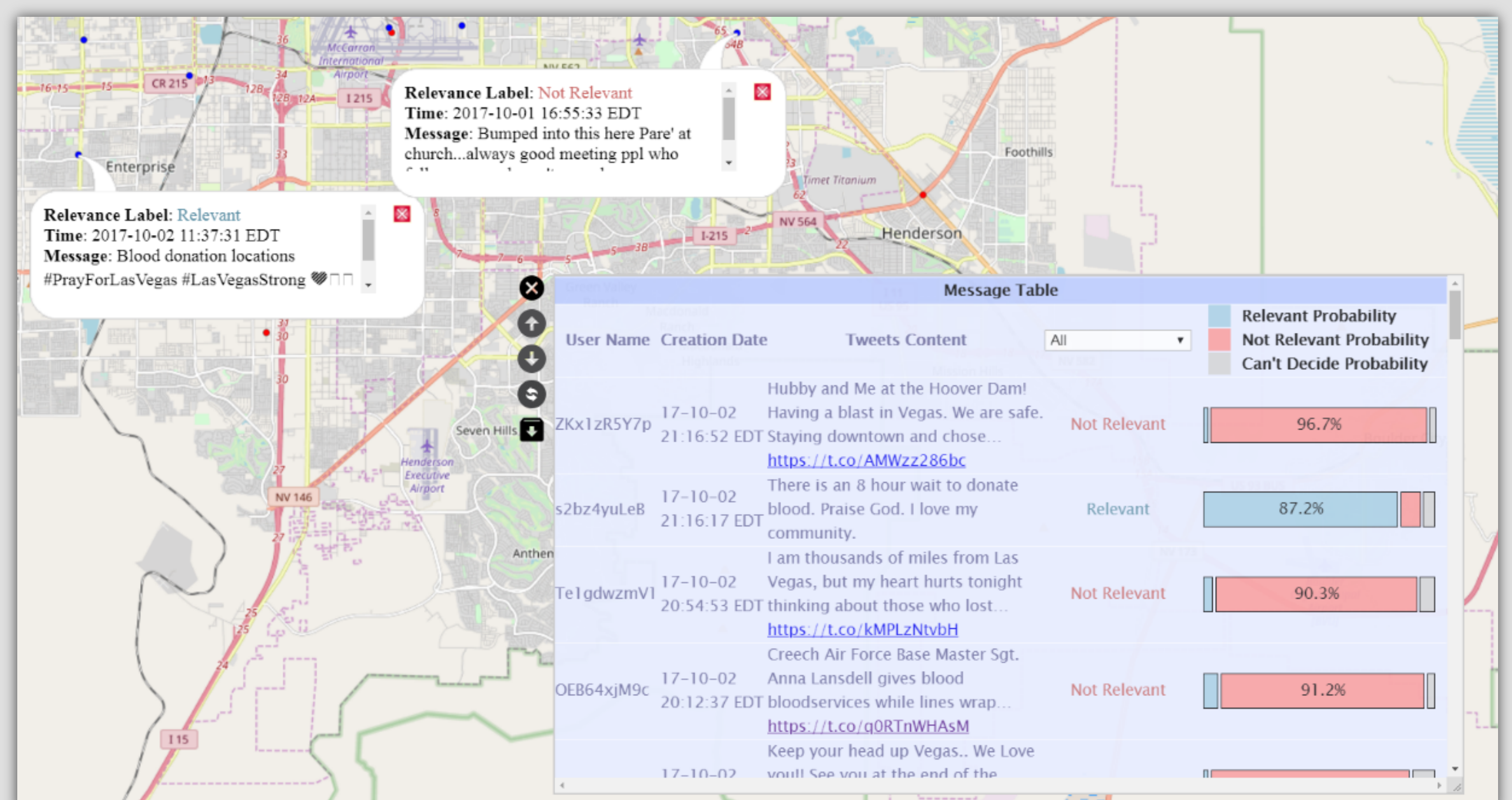
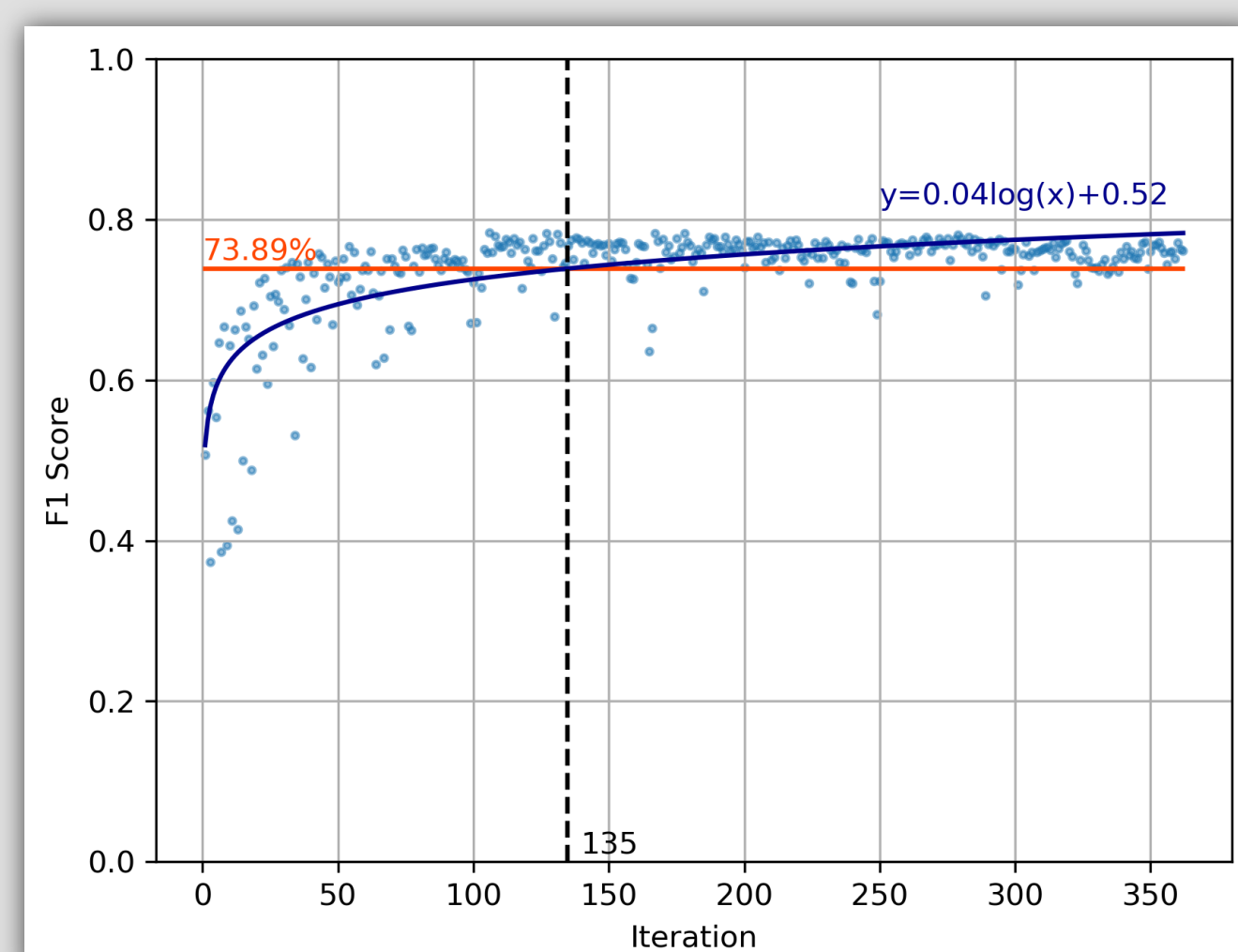
Approach:

- Interactive learning framework.
- Underlying neural network classifier that learns semantic relevance with word embedding.
- User trains the model and improves its predictions in real-time by providing textual examples of relevant and irrelevant information.



Design and Implementation:

- Convolutional Neural Network (CNN) and *Word2Vec* optimized for interactive learning.
- SMART 2.0: A visual analytics application that allows users to interactively explore, identify, and refine relevant data.



References:

- T. Mikolov, I. Sutskever, K. Chen, G. S. Corrado, and J. Dean. Distributed representations of words and phrases and their compositionality. In *Advances in neural information processing systems*, pages 3111–3119, 2013.

