

Imagine having a tool that could predict the Bhopal Gas Leak, which tragically caused the loss of 15,000 lives in India. What if we could have known about it before it happened? We have successfully developed an ensemble of language models that were trained on a corpus of authentic safety data sourced from Dow.

From simple word vector representations to complex machine learning contextual embeddings, our framework uses a diverse ensemble of natural language processing algorithms to select the ideal embedding method for a given text. Our novel meta embedding algorithm is able to simultaneously use up to eight separate embedding methods to predict the safety level of an incident.

By leveraging the collective strength of these state-of-the-art models, we significantly reduce the chances of overlooking potential safety concerns. This comprehensive approach ensures that incidents are not overlooked or dismissed, enabling plant operators to take timely corrective actions. Our model serves as the crucial first step toward achieving fail-proof safety in chemical plants, providing a transformative solution for preventing devastating accidents.

Checkout our github repository [NLPMaps](#) to know more and if you wish to see our model in action, come to our final presentation on June 7, 2023.