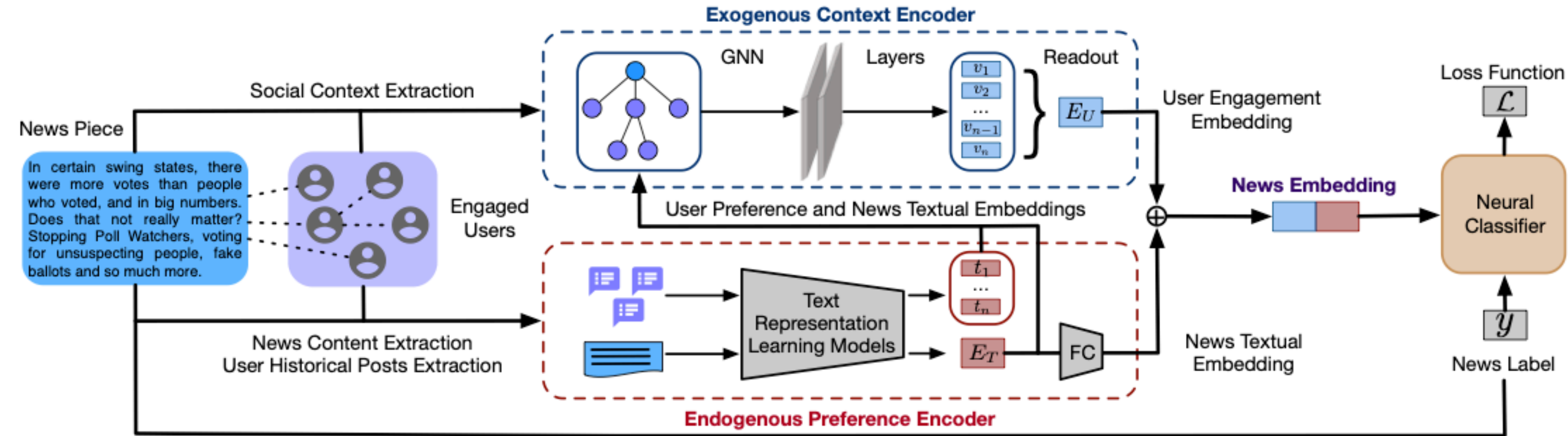


# Approach

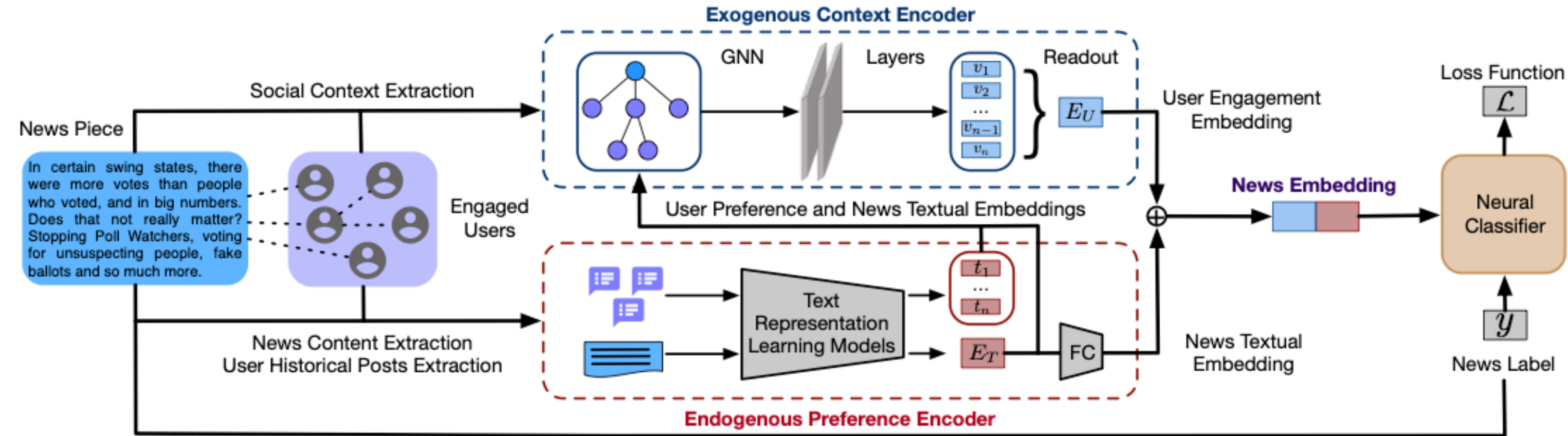
## Information Fusion



- Previous works have demonstrated that fusing the user features with a news propagation graph could boost the fake news detection performance.
- Propose a hierarchical information fusion approach, first fuse the endogenous and exogenous information using the GNN, the news textual embedding and user preference embedding can be taken as node features.
- Apply a readout function over all node embeddings to obtain the embedding of a news propagation graph. The readout function makes the mean pooling operation over all node embeddings to get the graph embedding (i.e., user engagement embedding).

# Approach

## Information Fusion



- Since the news content usually contains more explicit signals regarding the news' credibility, so fuse the news textual embedding and user engagement embedding by concatenation as the ultimate news embedding to enrich the news embedding information.
- The fused news embedding is finally fed into a 2-layer MLP with two output neurons representing the predicted probabilities for fake and real news.
- The model is trained using binary cross-entropy loss function and is updated with SGD.