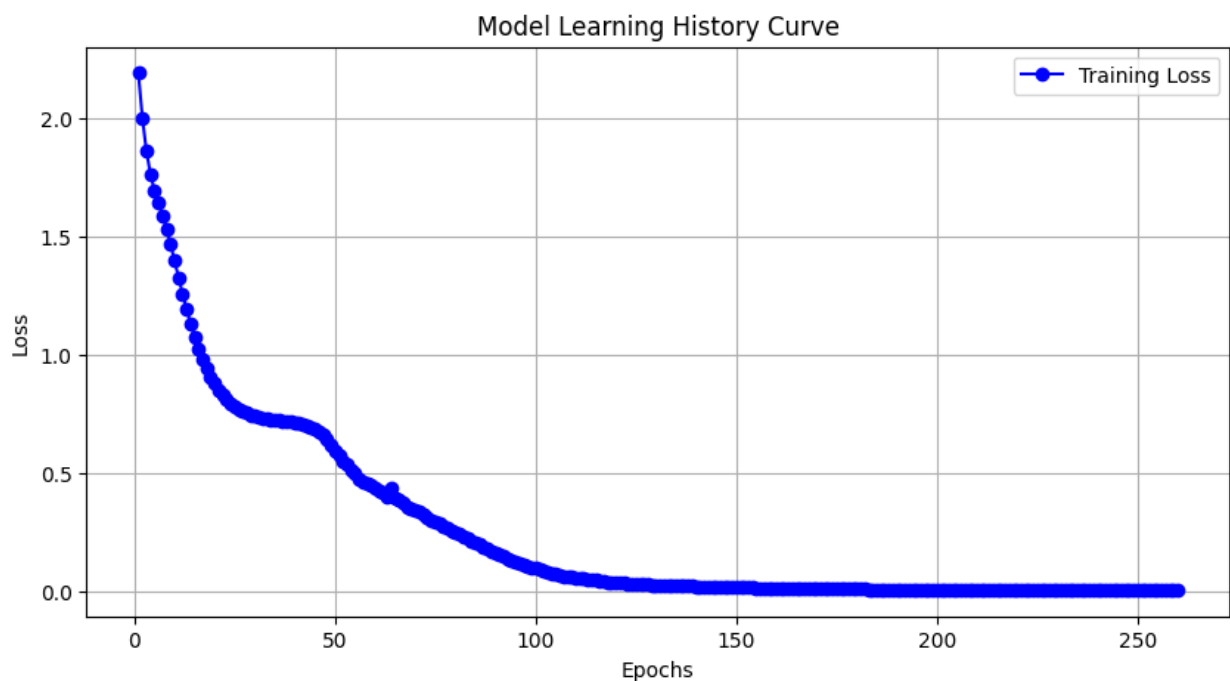# LSTM Toxicity Classification Results

1. Model Architecture

- **Model Type:** Bidirectional LSTM (Bi-LSTM)
- **Embedding Dimension:** 300
- **Hidden Dimension:** 128
- **No. of Layers:** 1
- **Output Classes:** 9
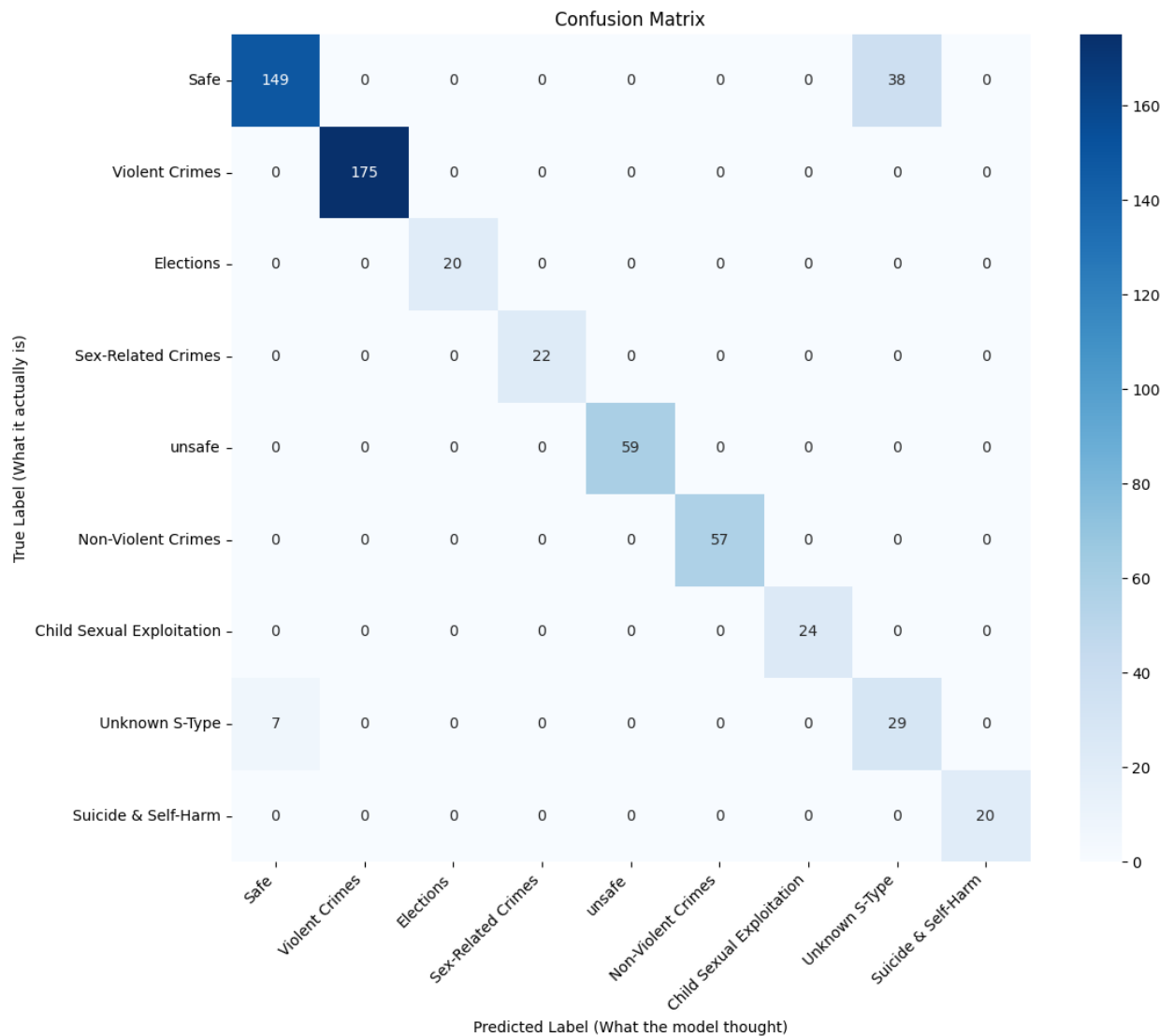- **Optimizer:** Adam (Learning Rate: 0.001)

2. Training Graphs (Bonus)

- **Observation:** The training loss decreased steadily from ~2.4 to ~0.005, indicating the model successfully learned the patterns without major overfitting.

3. Evaluation Metrics (F1 Score) + Confusion Matrix (Bonus)

	precision	recall	f1-score	support
Safe	0.96	0.80	0.87	187
Violent Crimes	1.00	1.00	1.00	175
Elections	1.00	1.00	1.00	20
Sex-Related Crimes	1.00	1.00	1.00	22
unsafe	1.00	1.00	1.00	59
Non-Violent Crimes	1.00	1.00	1.00	57

Confusion Matrix

- **Analysis:** The diagonal shows correct predictions. The model struggles sometimes to differentiate between "Safe" and " Unknown S-Type" .