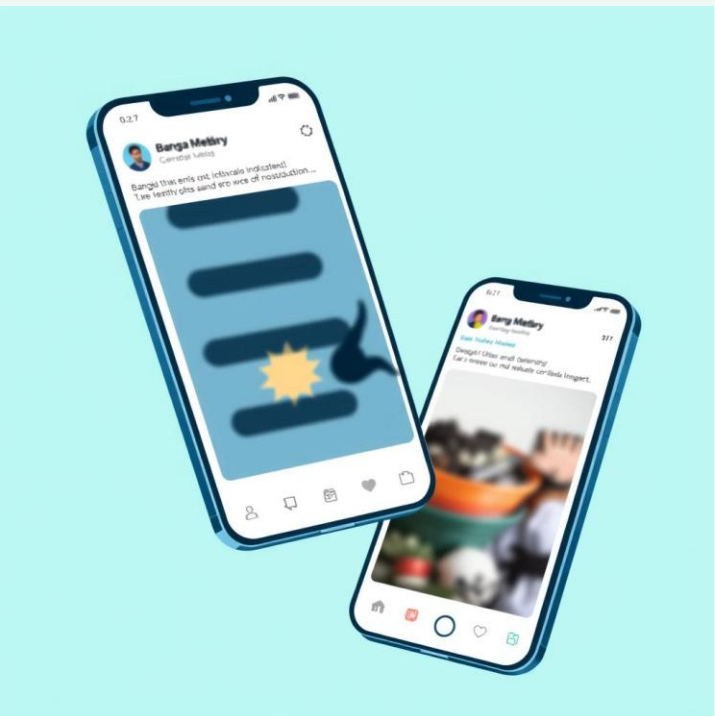


# BanglaMM-Disaster: A Multimodal Transformer-Based Deep Learning Framework for Multiclass Disaster Classification in Bangla

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## 🚨 THE CHALLENGE



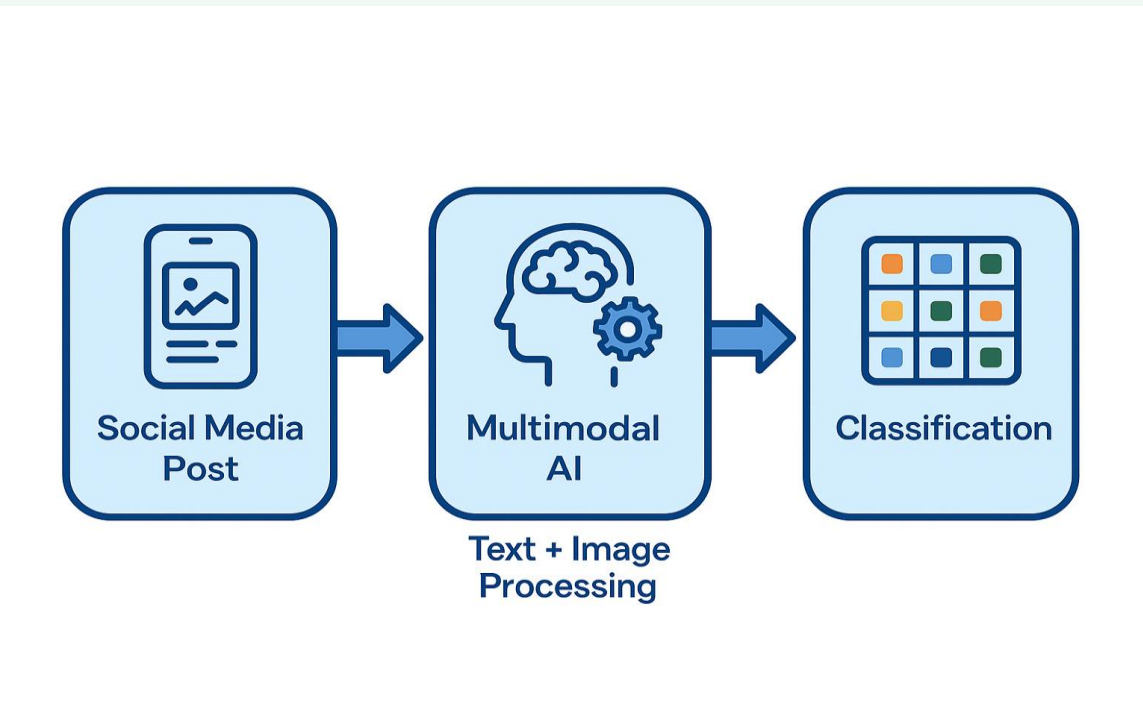
Bangladesh faces frequent natural disasters

300M+ Bangla speakers lack automated monitoring

Social media provides real-time disaster updates

No multimodal classification system exists for Bangla

## 🔬 OUR SOLUTION



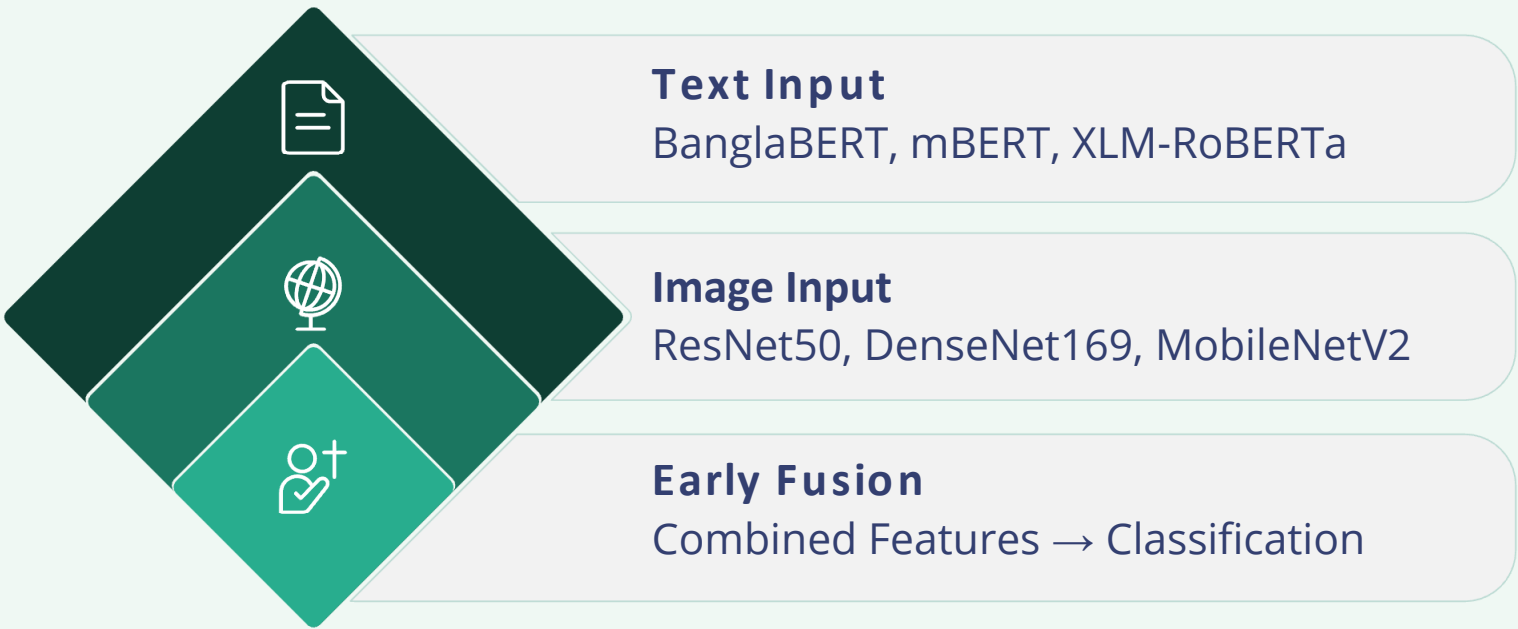
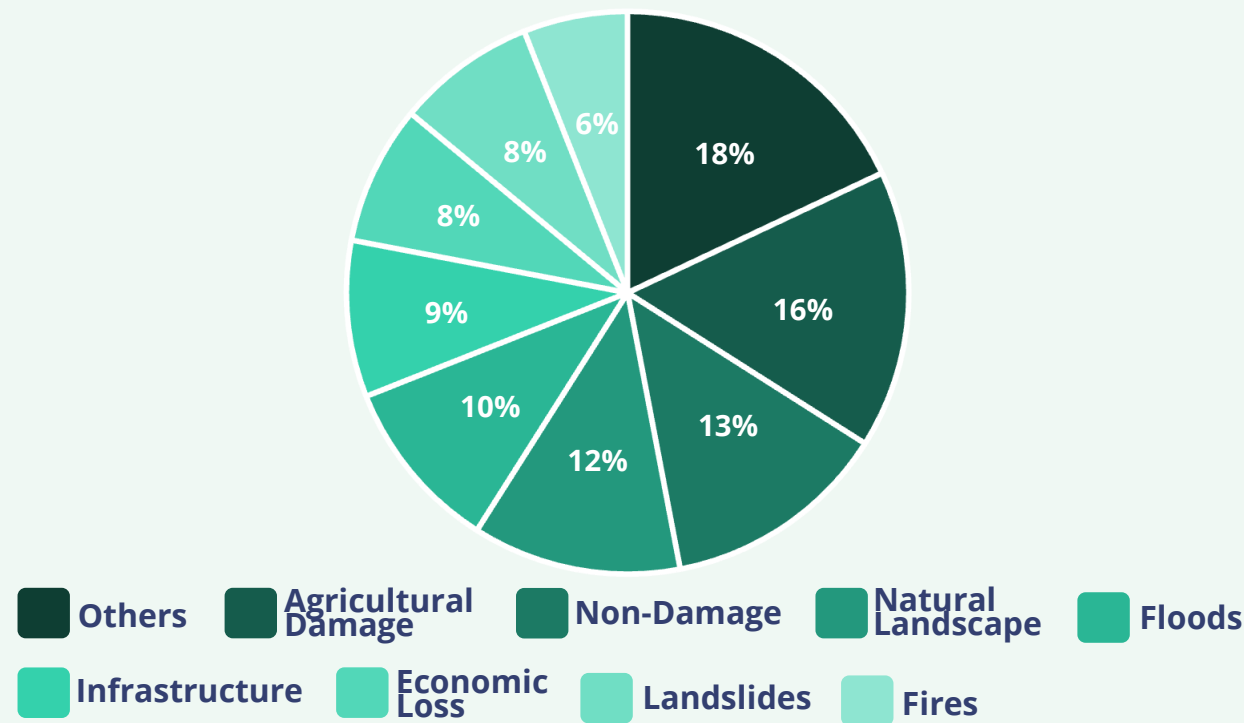
First comprehensive multimodal disaster AI for Bangla

Transformer-CNN fusion architecture

Combines text analysis + visual understanding

Classifies 9 disaster categories automatically

## 📊 DATASET & APPROACH



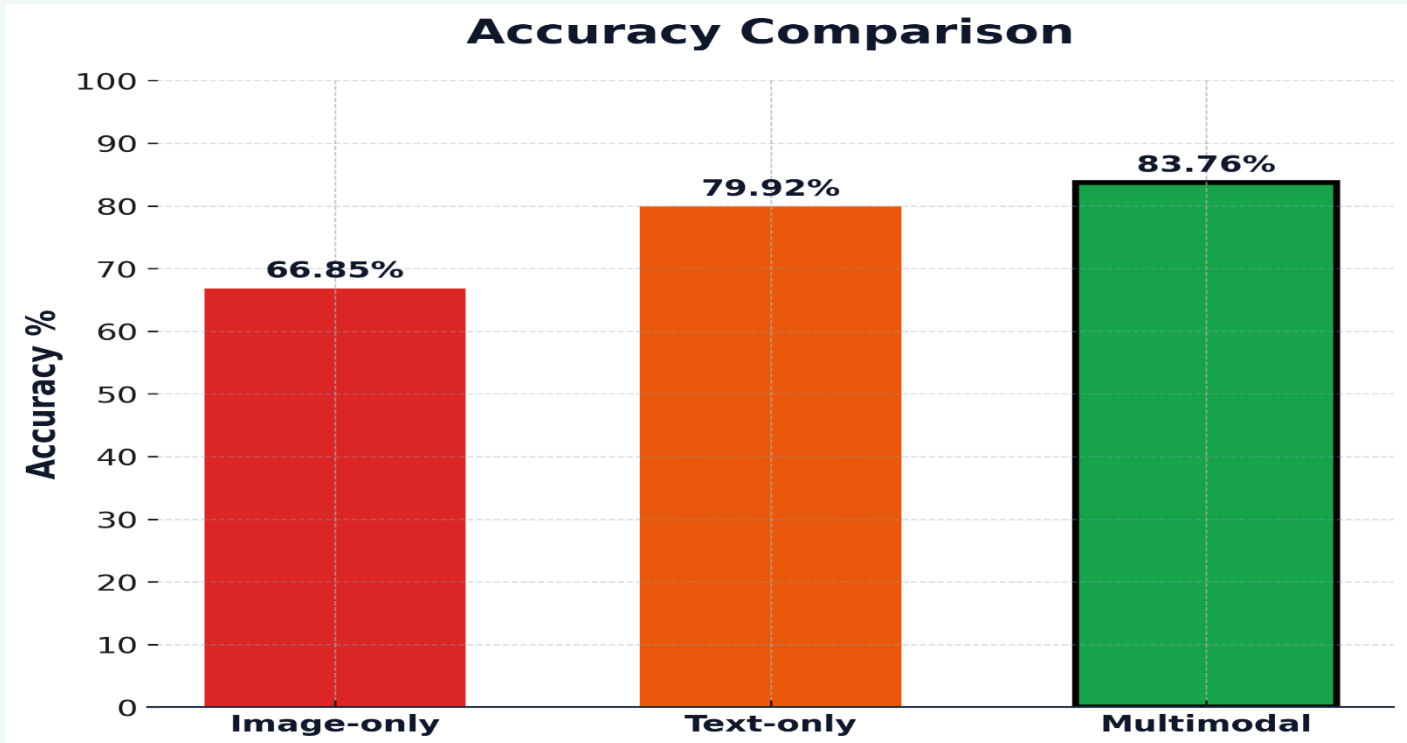
5,037 annotated Bangla social media posts

Advanced transformer models for text processing

9 disaster categories with balanced distribution

State-of-the-art CNN architectures for images

## 🎯 RESULTS & IMPACT



🔔 Real-time Monitoring

⚡ Faster Response

🌐 300M+ People Served

83.76% accuracy achieved (best performance)

+3.84% improvement over text-only approach

+16.91% improvement over image-only approach

Enables real-time disaster response for millions