TextIntel : (NLP based Threat Classifier)
By Team -> TechHunters

Demo Video Link

Defense analysts receive high volumes of mixed-language communications (Hindi/English/Hinglish).

Manual triage is slow; critical leads can be missed.

Need automated NLP classification into Benign / Suspicious / Critical with clear visual cues.

Must support secure access, auditability, and fast search across historical intel.

Our Solution

• End-to-end NLP pipeline: ingest -> clean -> detect language -> multilingual embeddings -> NER -> threat classification

• Supports Hindi, English, and Hinglish with code-mix handling

• Web-based interface for uploading text, viewing color-coded alerts, and highlighting entities

• Role-Based Access Control (RBAC): Analysts can upload/analyze, Commanders view summaries only

• Feedback loop: analysts can correct model predictions to improve accuracy over time using a retrain logic

• Secure storage with encryption and audit logs

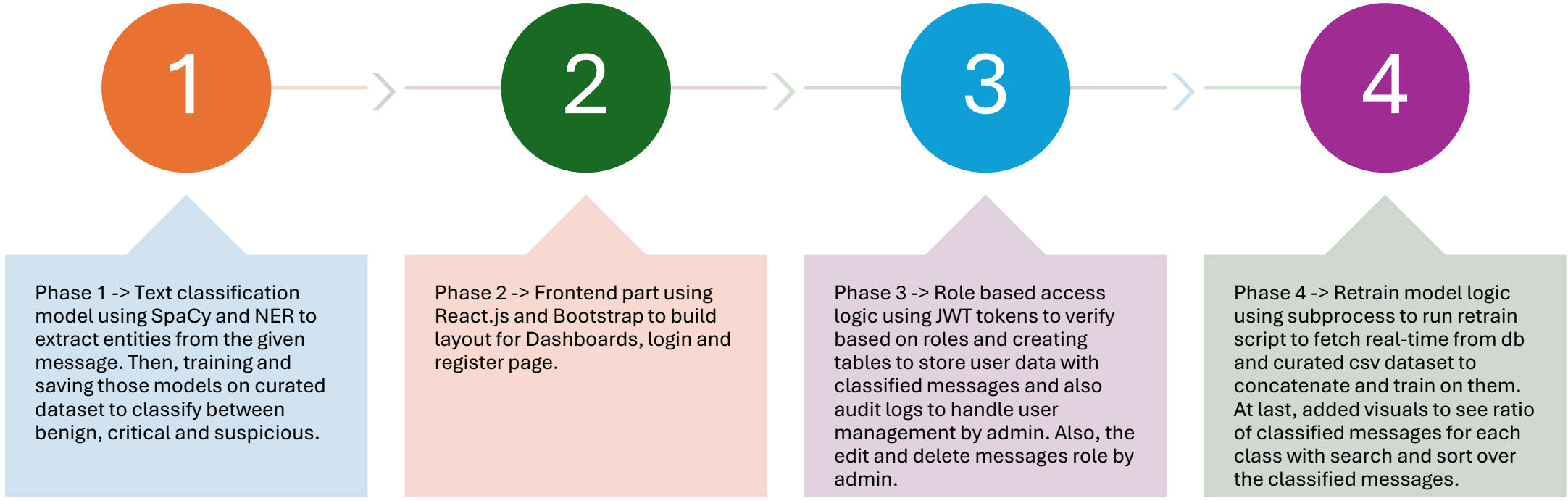
Innovation

- Classification for texts through user input and pdf also to classify, and visuals for critical, benign and suspicious messages.
- Hindi/English messages classification support.
- Multi-role dashboards with role access for user, admin and commander
- Analyst-in-the-loop learning (active learning + weak labels) to reduce drift.
- Entity-aware highlighting prioritizes locations, people, orgs, and weapons.
- Privacy-first architecture: encryption at rest + field-level access.

Tech Stack

- Backend: Python (FastAPI), Node.js
- Frontend: React.js, Bootstrap, Axios
- Storage/DB : PostgreSQL
- Auth: JWT
- ML/NLP: SpaCy, Tensorflow, PyMuPDF

Implementation Plan



Impact & Future Scope

Fine tuning on multilingual-cased-bert for higher accuracy and more representative embeddings

Analyst productivity via auto-highlighted entities & similar-case context.

Speech to text for intercepted audio; image/doc OCR; geo-temporal heatmaps.

Federated/air-gapped training; red-teaming for robustness; continuous drift monitoring.

Vector db for semantic similarity over text embeddings for faster result.