

cyber_incident_monitoring/

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|
| └─ frontend/          # Frontend for user interface
|   └─ public/          # Static assets (images, icons)
|   └─ src/
|     └─ components/    # React/Vue components
|     └─ pages/         # Individual pages (dashboard, incidents)
|     └─ services/      # API calls to backend
|     └─ App.js         # Main app component
|     └─ index.js       # Entry point
|     └─ styles.css     # Custom CSS
|   └─ package.json     # Frontend dependencies
|
| └─ backend/           # Backend for data handling and API endpoints
|   └─ api/
|     └─ incidents/     # Routes for incidents handling
|     └─ ── __init__.py
|     └─ ── views.py    # API views for incidents
|     └─ users/         # Routes for user management (optional)
|     └─ ml/           # Machine learning API routes
|   └─ services/        # Services like scraping, data fetching
|     └─ data_pipeline.py # Data pipeline management
|     └─ twitter_scraper.py # Scraping data from Twitter API
|     └─ news_scraper.py # Scraping news data
|   └─ utils/           # Helper functions
|     └─ database.py    # Database connection handling
|     └─ preprocessing.py # Data preprocessing scripts for ML
|   └─ app.py           # Main Flask or FastAPI application
|   └─ requirements.txt # Backend dependencies
|
| └─ ml_model/          # Machine learning related files
|   └─ data/
|     └─ raw/           # Raw data collected from sources
|     └─ processed/     # Processed/cleaned data for ML model
|   └─ models/          # Saved ML models
|     └─ incident_classifier.pkl # Trained ML model for incident classification
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|   ├── notebooks/          # Jupyter notebooks for experimentation
|   ├── train_model.py      # Model training script
|   ├── evaluate_model.py   # Model evaluation script
|
|   ├── database/          # Database configuration and scripts
|   |   ├── migrations/    # Migration files (if using ORM like SQLAlchemy)
|   |   ├── init_db.py     # Script to initialize the database
|   |   ├── schema.sql     # SQL schema for relational database
|   |   ├── mongo_config.py # MongoDB configuration
|   |
|   ├── data_pipeline/     # Data collection and processing pipeline
|   |   ├── jobs/
|   |   |   ├── ingest_data.py # Script to schedule data ingestion (scraping, API)
|   |   ├── logs/          # Logs for pipeline activities
|   |   ├── airflow_dag.py  # Airflow DAG for data pipeline orchestration
|   |
|   ├── config/            # Configuration files for different environments
|   |   ├── config.py       # Main configuration (API keys, DB connections)
|   |   ├── development.yaml # Development-specific settings
|   |   ├── production.yaml # Production-specific settings
|   |
|   ├── tests/             # Unit and integration tests
|   |   ├── test_api.py     # Test cases for API routes
|   |   ├── test_ml.py     # Test cases for ML model predictions
|   |
|   ├── deployment/        # Deployment configuration
|   |   ├── docker-compose.yml # Docker Compose for local development
|   |   ├── Dockerfile      # Dockerfile for backend
|   |   ├── nginx/          # NGINX configuration for production
|   |   ├── k8s/            # Kubernetes manifests (if using Kubernetes)
|   |
|   ├── docs/              # Documentation for the project
|   |   ├── README.md       # Overview of the project
|   |   ├── architecture_diagram.png # Architecture diagram of the system
|   |   ├── flowcharts/     # Flowcharts and diagrams for understanding flow
|   |
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└─ .env	# Environment variables for the project
└─ .gitignore	# Files to ignore in version control
└─ README.md	# Main README for the project