

# Aegis – Predictive Crime Safety Mobile App

Aegis is a **cross-platform mobile safety application** that provides **proactive crime awareness** using machine learning–driven insights. The app focuses on **predictive safety visualization**, helping users assess risk across urban areas through interactive maps and time-based analysis.

## Highlights

- **ML-powered safety heatmaps** visualizing crime risk levels (safe → risky)
- **Temporal forecasting controls** to analyze predicted trends by year, month, and hour
- **Community search & navigation** for area-specific safety insights
- **Custom SVG map rendering** using Flutter's `CustomPainter`
- **Optimized performance** via API caching and efficient state management
- **Data-driven insights** combining historical patterns with ML predictions

Designed with scalability in mind, Aegis supports future enhancements such as route-based safety scoring, offline caching, and predictive alerts.

## Tech Stack

Flutter (Dart) · FastAPI · PostgreSQL · XGBoost · scikit-learn · Riverpod · CustomPainter · Figma

## ← Aegis – Comparative Safety

Community A  Community B  [Compare](#)

Inputs — Month: 12 Hour: 9 Year: 2025

### Real-Time Safety Comparison

Safety A (now) <b>7.67</b>	Safety B (now) <b>7.44</b>
Severity A (now) <b>8.332</b>	Severity B (now) <b>9.090</b>

Using real-time inputs → Month: 12, Hour: 9, Year: 2025

### Left — Area 1

#### Historical Data

Year  Month

Severity: 8.332

**Moderately Safe** ⚠️

Total Arrests: 16

Primary Crime: THEFT

Hotspot: APARTMENT

### Right — Area 71

#### Historical Data

Year  Month

Severity: 9.090

**Slightly Unsafe** ⚠️

Total Arrests: 19

Primary Crime: BATTERY

Hotspot: STREET



Heatmap



Stats

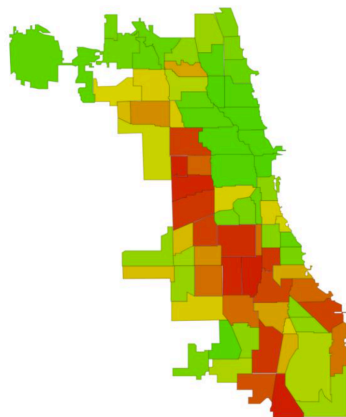


Search

## ← Aegis – Heatzones

Heatzone Mapping: ● Safe → ● Unsafe

Month  Hour  Year



Heatmap



Stats



Search