# GEOGRAPHIC INTELLIGENCE IN FRAUD DETECTION

LEVERAGING SPATIAL DATA TO UNCOVER FRAUDULENT PATTERNS

# MAPPING THE CUSTOMER'S HOME BASE AND TRAVEL PATTERNS

| CONCEPT | DESCRIPTION | FRAUD INDICATOR |
|---|---|---|
| Home Base | Most frequent transaction location | Anchor for distance checks |
| Distance Radius | Physical distance from home base | Large deviations signal risk |
| 95% Rule | Top 5% of distances flagged | Outlier transactions |
| Dispersion Score | Spread of transaction locations | High score = higher risk |

# IMPOSSIBLE TRAVEL DETECTION AND TECHNICAL LOGIC

# DETECTING IMPOSSIBLE TRAVEL AND GEOGRAPHIC FRAUD SIGNALS

| FEATURE | DESCRIPTION | FRAUD SIGNAL |
|---|---|---|
| Max Distance From Home | Farthest transaction from home base | Unusual long-range activity |
| Unique Regions Count | Distinct geographic areas in short time | Multiple regions = high risk |
| Anomaly Rate | % of transactions outside normal zone | High anomaly rate indicates compromise |

# 360° FRAUD INTELLIGENCE FRAMEWORK

# INTEGRATING GEOGRAPHIC INTELLIGENCE WITH BEHAVIORAL FEATURES

| PILLAR | FOCUS | PURPOSE |
| --- | --- | --- |
| Channel Entropy | Unpredictability in channel usage | Detect irregular banking behavior |
| Behavioral Signatures | Spending velocity and stability | Identify sudden pattern changes |
| Geographic Intelligence | Location-based anomalies | Spot impossible travel and dispersion |