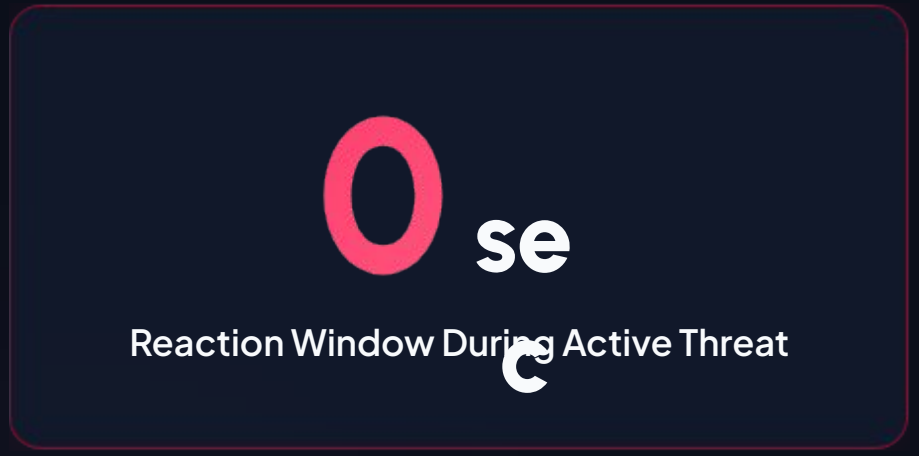
PRODUCTION BLUEPRINT V2.0.0

Nirbhaya+

Pre-Attack Conditioning & Spatial Intelligence Platform — Empowering women with subconscious muscle memory and spatial immunity before danger arrives.

- On-Device ML Pipeline (33 Keypoints)
- 3s Pre-Transit AR Spatial Sweep
- Zero Phone Use During Threat

The Phone Lockout Paradox



The Fatal Flaw in Standard SOS Apps

Traditional safety apps expect victims to unlock phones, tap buttons, or hold live video streams during an active physical assault.

Biomechanical Stress Reality: Under high adrenaline (>140 BPM), fine motor skills freeze, cognitive processing drops, and unlocking a phone becomes virtually impossible.

Nirbhaya+ shifts the paradigm entirely to pre-attack conditioning—so muscle memory acts without the phone.

PRODUCT STRATEGY

Core Product Vision

"Nirbhaya+ conditions everyday environments and personal items into subconscious defensive assets before danger arrives—empowering women with physical confidence, instant reflex memory, and spatial immunity."

3-Phase Behavioral Framework

Phase 1: Daily Habit

Done at home in 15 seconds. Scans everyday bag items to pre-learn grips and conducts interactive pose-aware self-defence drills.

Phase 2: Pre-Transit Sweep

10 seconds before walking. A 3-second camera sweep identifies bollards, lit paths, and shield barriers. Phone is pocketed before walking.

Phase 3: Instinctive Action

Active threat moment. ZERO phone interaction needed. Muscle memory, learned key grips, and biomechanical counters trigger instinctively.

Target Personas & Needs

Persona A: Late-Night Commuter

Priya (24) — Software Analyst

Walks alone from cab drop-offs across unlit parking garages and dark alleys.

Goal: Wants to scan her transit route 3 seconds before stepping into dark zones so her hands remain free during her walk.

Persona B: Empowered Learner

Ananya (19) — College Student

Wants to learn self-defence, but finds static online videos passive and non-corrective.

Goal: Wants gamified, bite-sized daily posture drills with real-time AI computer vision posture feedback.

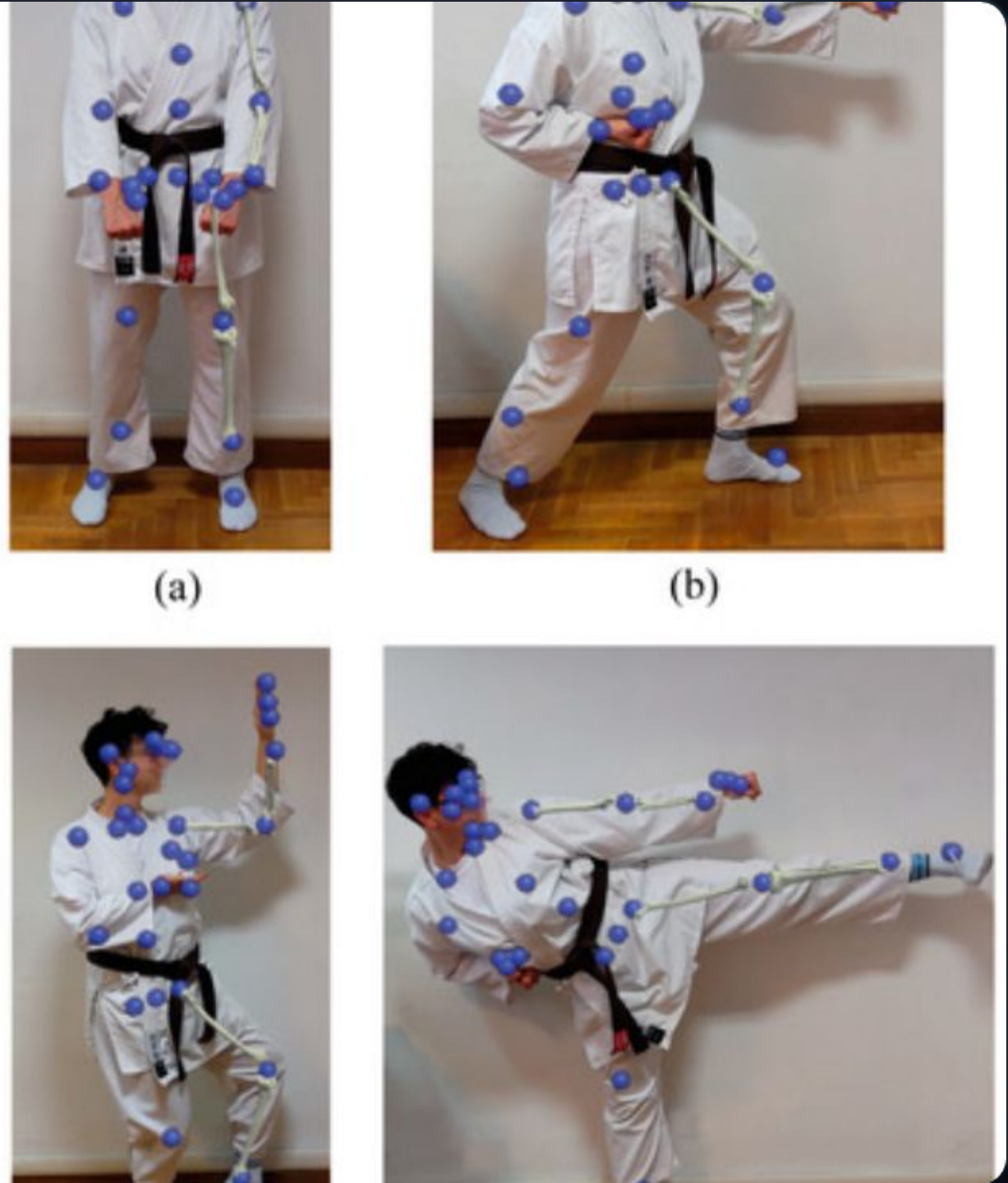
Visual Self-Defence Academy

MediaPipe Skeletal Engine

Tracks 33 body keypoints in real time at ≥30 FPS locally on phone RAM to build biomechanically sound strikes.

Joint Angle Validation: Calculates elbow extension angle for palm-heel strikes and monitors center-of-gravity stance width.

Dynamic Visual Feedback: Overlays green skeleton wireframe for optimal force vector, red for vulnerable balance, with real-time voice coaching.



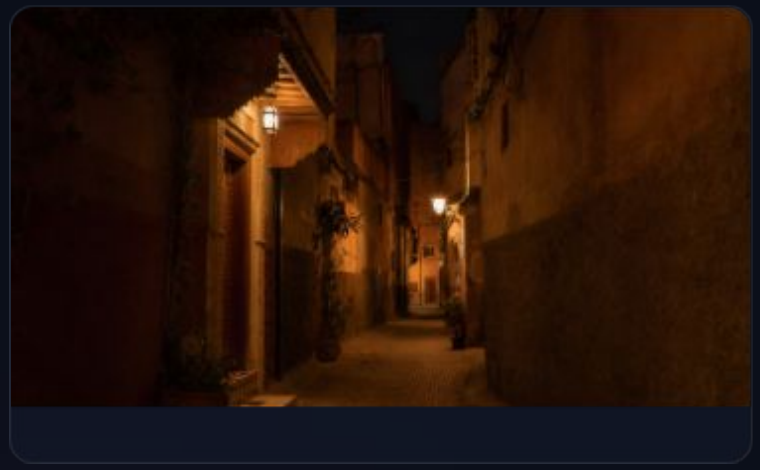
Tactical Vision & Object AI

Everyday Item Object Weaponizer

- **Ballpoint Pen:** Focal point pressure strike tool using a stabbing palm-root grip with thumb lock.
- **House Keys:** Broad point disruptor held in base-pinch grip to protect user's knuckles.
- **Water Bottle:** Centrifugal impact multiplier using a secure neck-base swing grip.
- **Perfume / Spray:** Stun & blind deterrent using thumb-trigger sightline alignment.



Pre-Transit Spatial Scanner



1. Unlit Zone Arrival

User approaches dark garage or night alley; pauses for 3 seconds.



2. 3-Sec AR Sweep

Maps parked cars & bollards as barrier shields; evaluates lighting.



3. Lit Corridor Projector

Projects green safe path; prompts user to pocket phone & walk alert.

On-Device ML Architecture

100% Privacy & Local RAM Processing

Camera frames are processed entirely on-device and **never uploaded to external servers or cloud storage**.

Guarantees zero privacy leakage and ensures flawless functionality even in cellular dead-zones (underground parking, unlit cell basements).

Quantized Model Optimization

MediaPipe Pose Studio: Computes 33 skeletal keypoints at ≥30 FPS using local GPU delegate.

YOLOv8-Nano: Quantized to INT8 precision (≤12 MB memory size) ensuring <3% battery drain per 10-minute training session.

Product Positioning Matrix

Primary Mechanism	Reactive Panic Alert	Passive Watching	Pre-Emptive Habit & Spatial Vision
Phone Use Time	During Crisis (Flawed)	Idle Leisure	10s BEFORE transit & daily home
Self-Defence Engine	None	Non-interactive videos	On-Device Pose Vector Corrector
Spatial Intelligence	GPS Pin Only	None	AR Escape & Object Weaponizer
Offline Performance	Fails without 4G/5G	Static File Download	100% Local Neural Engine

Development Roadmap

Q1 2027: MVP Engine

MediaPipe 33-Keypoint Pose Studio + YOLOv8-Nano INT8 Object Weaponizer deployment.

Q2 2027: Field Testing

Low-light neural tuning & beta trials with 500 late-night commuters across transit hubs.

Q3 2027: Ecosystem

Wearable haptic sync (Apple Watch/Galaxy) & campus safety infrastructure integrations.

Q4 2027: Scale

Dialect-aware audio coaching in regional languages & global expansion launch.

Questions & Next Steps

Building Subconscious Spatial Immunity & Reflex Confidence

$$\text{ACS} = (\text{Training Reps}) \times \frac{100}{\text{Sweep Time (s)}} \times (\text{Pose Accuracy \%})$$

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