

Injury Risk Monitoring – Personalized Feedback – Smart-Phone App

This prototyped smartphone-based tool helps users understand how well they move and whether they may be at higher risk for muscle or joint injuries. The system analyzes common movements—like squats or lunges—and compares them to healthy patterns seen in research and clinical practice. It then gives two simple outputs: a movement quality rating and a readiness or fatigue score, along with personalized exercise suggestions to help improve form and reduce injury risk.

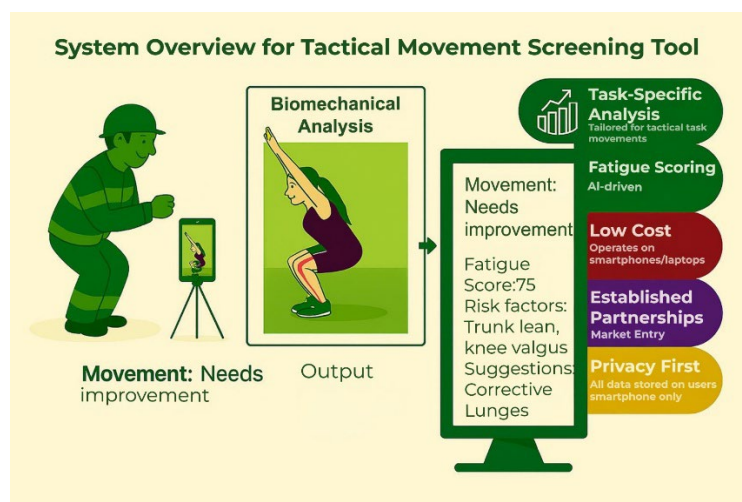
Features

- Operates on smartphone/laptops not expensive sensors or lab equipment and keeps data private
- Uses advanced video analysis, multiple pose-tracking algorithms, and machine-learning models that have been trained using expert clinician ratings
- Learns each user’s normal movement over time, enabling personalized fatigue and readiness scoring
- Generates tailored corrective exercises that adapt as the user’s movement quality improves or declines, creating a continuous feedback loop
- Combines two single-camera videos (front and side) into a unified movement profile, offering 3D-like insight without multi-camera setups

Ideal Applications

Tactical communities, including firefighters, military personnel, and emergency responders where musculoskeletal injuries (MSKIs) are among the leading causes of lost work time.

Stage of Development: Working Prototype



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