Using Smart Watches to Reduce Train-Pedestrian Collisions

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Agenda

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Introduction

Train-pedestrian collisions are leading cause of fatality in rail accidents around the world.

About every 3 hours, a person or a vehicle is hit by a train in the US.

Trespassing accident is an important challenge of railways worldwide.

new technologies, innovative solutions and digital revolution can play an important role to prevent trespass collisions.
Derailment of trains
Train collision with another train
Train collision with an obstacle
Individual hit by a train
Individual falling from a train
Fire in rolling stock
Electrocution by overhead line or third rail
Shunting operations
Runaway vehicles

Types of accidents according to UIC-SDB

- Individual hit by train
  - 51.2% hit by a train not at LC
  - 8.5% hit by train at LC
- Train collision with an obstacle
  - 7.4% collision with an obstacle not at LC
  - 16% collision with obstacle at LC

Source: UIC Safety Report 2016
Ways to reduce Pedestrian-Train Collision

- Warning signs
- Countermeasures
- Education
- Innovative solutions and digitalization
Increasing use of novel technologies

Source: https://www.statista.com
Objectives

Reduce collision of pedestrian-trains and save more life

To aware people who are near a railway line when he/she is at risky distance from coming train
Method

**STEP 1**
Trains location data

**STEP 2**
User location data

**STEP 3**
Software Application
Application Software

Railway line GPS info in .CSV format

Vibrating

Voice alarming
Advantages

1. Fast reaction
   Contact with body help people to react faster

2. Aware blind and deaf people
   Vibrating and voice alarming of smart watch help blind and deaf people to be aware from danger

3. Aware trespasses
   Finding trespassers and aware them

4. Cost effective
Limitation and Disadvantage

Dependence on novel technology

The software need to be installed
Conclusion

- Opportunity of increasing in usage of wearable devices, specially Smart Watches in years ahead
- Collisions reduction even not at LC
- help blind and deaf people to be aware from danger of trains
Thank you for your kind attention

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