Using Computer Vision to Assess Road Safety Impact

Application in Addis Ababa, Ethiopia
From low to high-frequency outcomes

Road crash injuries and deaths can be high-impact, yet low-frequency events*

IE methods require statistical power to detect the impact of a road safety intervention

Alternative to use other road safety observable outcomes occurring with higher-frequency

*at the intersection level of analysis.
Traffic videos as data source

Collision analysis automates the calculation of road safety outcomes applying computer vision on video footage.

Example of the use of video–based technology to identify a vehicle to vehicle near–collision.

Source of figures: Brisk Synergies.
Traffic videos used to assess road user behavior

Use of computer vision to identify unique road users

Heatmap of pedestrian crossing in a sample junction
Outcomes Assessed

Example of the use of video–based technology (near-collision vehicle to pedestrian)

High-frequency road safety outcomes:

- Near-collisions
  - Vehicle to Vehicle
  - Vehicle to Pedestrian
- Red light violations
- Pedestrian jaywalking
- Speeding
- Right of way violations

Source of figures: Brisk Synergies
Application in Addis Ababa, Ethiopia

- **Objective of the IE:** To assess road safety outcomes from upgrading 250+ junctions and 5 urban corridors in Addis Ababa over 5 years, under a complete street design concept.

![Pop-up intersection upgrade in Addis Ababa](image)

Road Traffic Fatalities 2016
Thank You