Problem Statement Worksheet (Hypothesis Formation)

<What is the business problem you are investigating?

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Neighborhood watch sentry/scout

1 Context

My sisters street is very narrow and crowded 2 lanes but more like 1.5 available. The problem is that the street is over 1 mile long with long straight stretches, and drivers consistently speed well beyond safe levels. Despite repeated pleas for speed-bumps or other safety measures, the city has not implemented anything(over many years). Anecdotally, many of the same vehicles are repeat offenders and live within the area.

2 Criteria for success

Develop a small/portable/discrete physical unit that can monitor and record speeding cars. Able to log speed, car type, color, plate #, datetime.
Able to predict when and which cars will speed on the street. Can utilize these predictions to try and mobilize law enforcement to deter speeding on the street.

3 Scope of solution space

Main purpose is to record and try to predict speeding car behavior. Device will be like a neighborhood watch that can send alerts and reports.

4 Constraints within solution space

Device needs to be lightweight, small form factor, low power.
Will have 2 Cameras, nightvision ability
Needs to be affordable but also high performance
Potential legal issues with recording a public street from private property. States vary.

5 Stakeholders to provide key insight

Sister and Brother in law – Prototype customer, get insight to what they want.
Lawyers about recording/logging data.

6 Key data sources

Data collected from device cameras over time.

Previously trained models for different object classifications and labeling.
https://www.tensorflow.org/datasets/catalog/cars196

Videos of traffic/intersection cameras to train models.

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