



A conceptual PM case study on improving Uber's routing reliability using crowd-sourced signals.



Problem

Uber drivers frequently encounter unexpected road closures due to construction, events, or accidents.

Because map data lags real-world conditions:

- Drivers manually reroute, losing time and earnings
- ETAs become unreliable
- Trust in navigation guidance erodes

Key Insight

Drivers observe ground-truth conditions before maps update.

While individual reports are noisy, aggregated signals can become reliable when weighted by confidence and time.

Value Hypothesis

If Uber aggregates real-time driver-reported road issues with trust weighting and decay, routing reliability will improve faster than third-party map updates — reducing time loss and increasing driver trust.

Solution Concept (High-Level)

- A lightweight, signal-based routing enhancement
- Simple driver signal: *"Road blocked / inaccessible"*
- Signals aggregated across multiple drivers
- Confidence thresholds before affecting routing
- Time-limited suppression (automatic decay)

Risks

- False or malicious reports
- Overreaction to isolated signals
- Increased routing complexity

Mitigations

- Driver reputation weighting
- Multiple confirmations required
- Time-bound validity
- Passive reporting (no incentives to spam)

Primary Success Metrics

- Reducing uncertainty creates more value than increasing options
- Trust and reliability are core UX requirements.
- Passive signals (alerts) outperform active engagement in planning workflows

Guardrails Success Metrics

- False-positive rate
- Driver trust indicators
- Routing-related support tickets

Links



- Portfolio: <https://www.arjunportfolio.xyz>
- Slide Deck: <https://portfolio-assets-arch.s3.eu-west-2.amazonaws.com/taxiCaseStudy/tcs+slideDeck.pdf>