

6a.020.UL - Data Integrity of Smart City Traffic Infrastructure

Year 6 - Deep Dive Video

[6a.020.UL_Deep Dive Video \(8:18 minutes\)](#)

Project Description

In Smart City settings, various sensors are used to collect traffic data (e.g., cameras, piezoelectric, acoustic, and magnetic sensors). Data obtained from these sensors are used to support various types of services including traveler information, ramp metering, incident detection, travel time prediction, and vehicle classification. The accuracy and integrity of collected data are crucial to the reliability of such services. Recent research has shown that hackers can compromise the sensors and send misleading data to the controller, potentially causing significant traffic problems and compromising the entire operation of the smart city services. This project proposes a robust anomaly detection algorithm on sensor traffic data. The algorithm runs in three complementary phases: temporal detection, spatial detection and GPS calibration.

Project Team

Team Member	Role	Email	Phone Number	Academic Sites/Industry Members
Khalid Elgazzar	PI	Khalid Elgazzar	(337) 482-6875	UL Lafayette
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Sumit Shah	IAB Project Mentor	Sumit Shah	Not available	Funded by: CGI

Project Deliverables

	Deliverable
1.	A temporal prediction model for real-time traffic data
2.	A spatial prediction model for real-time traffic data
3.	An integrated ARIMA-based algorithm for traffic data integrity
4.	A technique to verify traffic sensor measurements with GPS probe data in real-time

Project Documents

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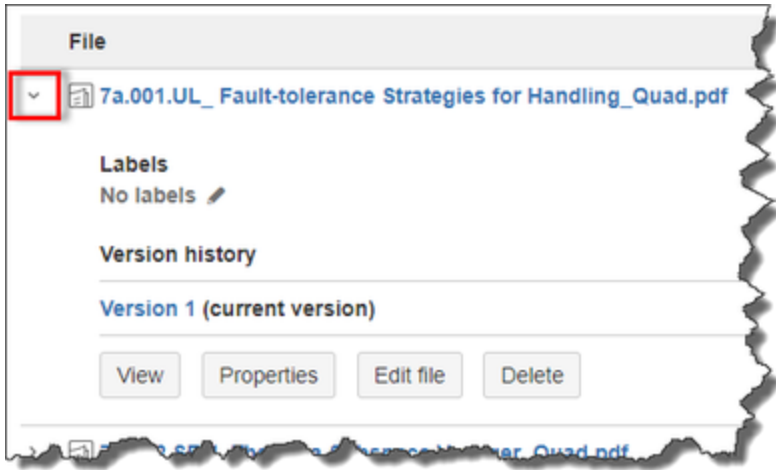


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