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Urban Computing Group

Dashboard/Visualization: RobSim - Robustness Simulator for FIFA 2022

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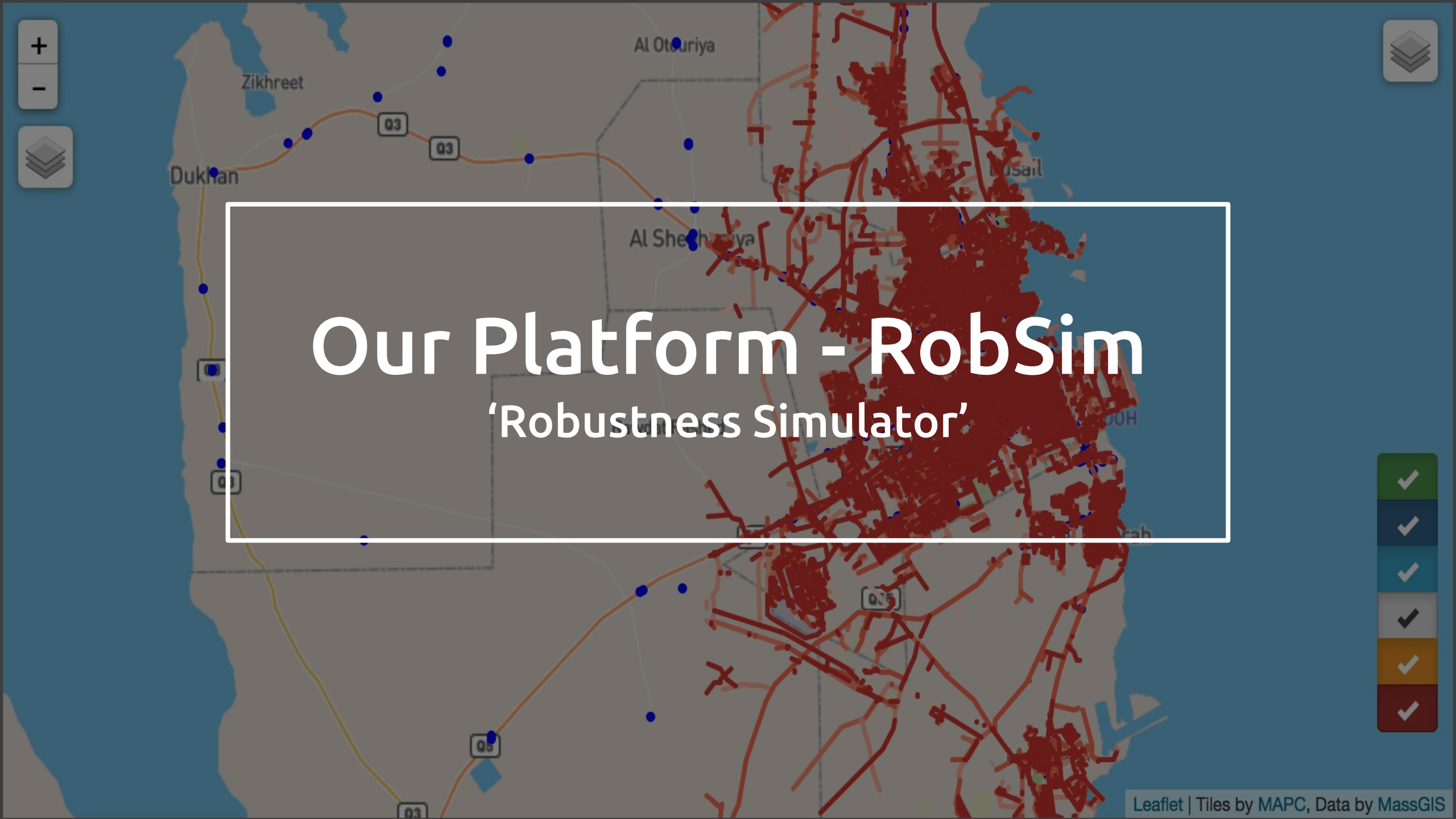
Context

- FIFA 2022
  - 22nd edition
  - First World Cup in the Middle East
- Large Event (1 million people are expected to come (~ 47%)
- A need to manage crowd and traffic on multi-layer transportation network (road/bus/metro)
- A need for a tool to test what-if scenario regarding blocking/opening or enabled/disabled ways



Our Platform - RobSim

‘Robustness Simulator’

Architecture

- Data Acquisition
  - Challenges of processing geospatial data
  - Geospatial data storage
- Analysis
  - Roads as a graph
  - Nodes centrality (How important/critical is a node)
- Visualization
  - Map-centered dashboard
  - Development Language

Architecture

- Back-end features
  - Compiled .json file
  - Sql database
  - Models:
    - Computation Metrics
    - Node/ Segments with different attributes
- Front-end features
  - Development language
  - On Each Feature
  - Map-Centered Dashboard

Functionalities

Functionalities

- → Visualize metrics
  - ◆ Analyze traffic load, centrality of nodes
  - ◆ Understand importance of certain path/node
- → To enable or To disable segments
  - ◆ Visualize the disabled nodes and segments
  - ◆ Store them in database
- → Send notifications
  - ◆ Alert traffic police and Urban planners when a network is disabled - Using SMS/Email

Demo