

Simulation of Device Location

Optimizing the testing of location-based services and location-aware applications with a configurable location simulation tool.

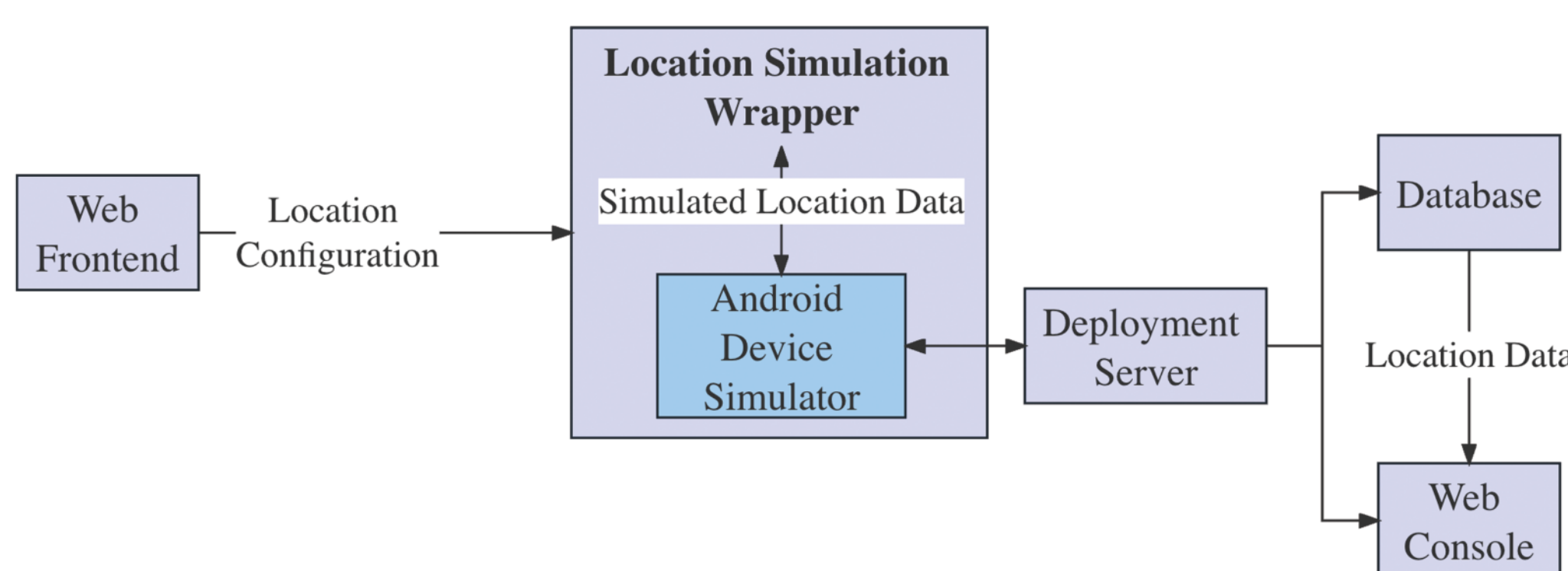
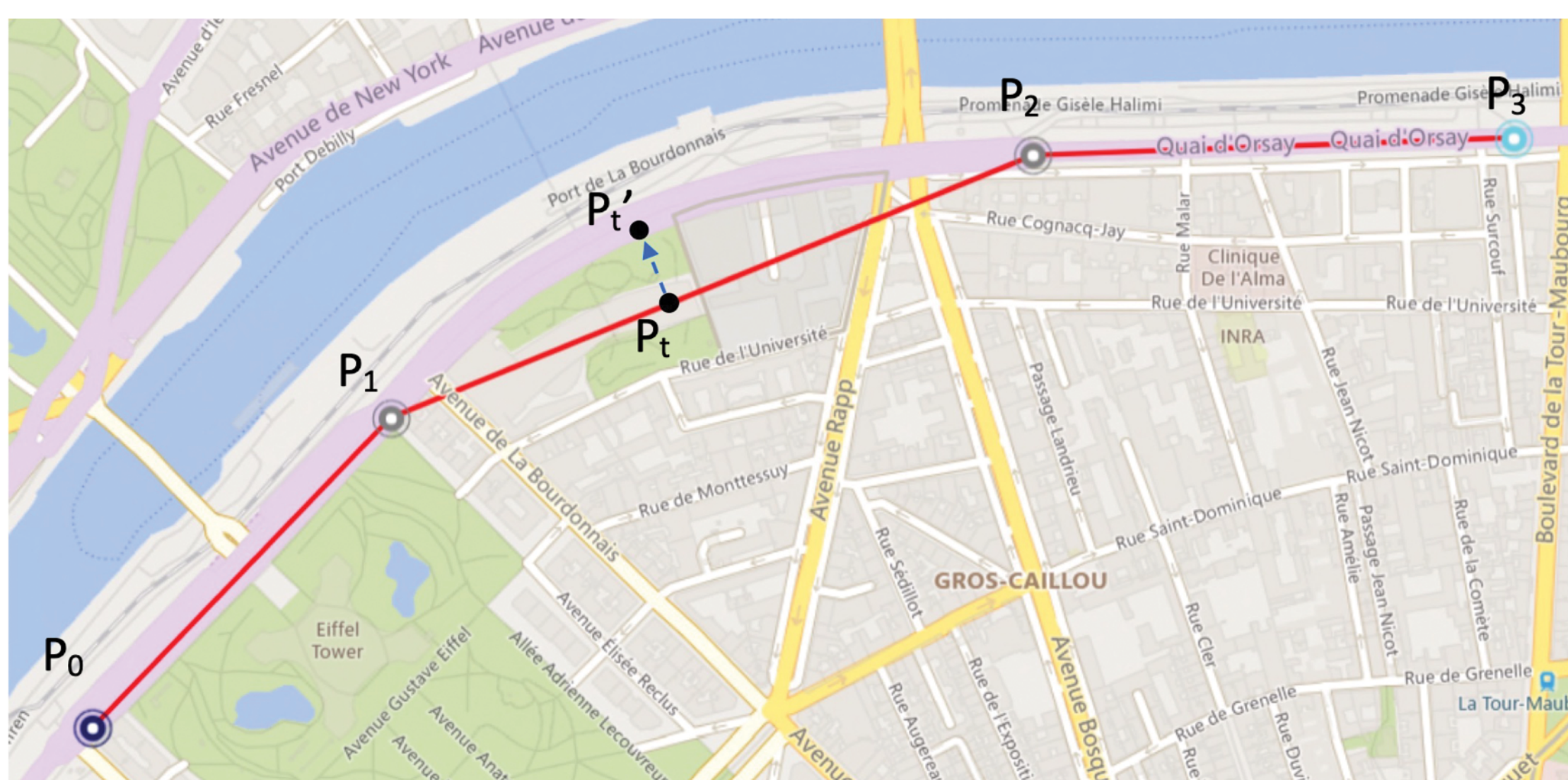
Xinman Liu

Shurui Zhou

ACADEMIC SUPERVISOR

Kiarash Narimani

INDUSTRY SUPERVISOR



PROJECT SUMMARY

In today's mobile application landscape, location-based services and location-aware applications stand out as an important feature, offering users a diverse array of mobility solutions. However, the testing of these services presents unique challenges. A significant challenge faced by developers is collecting real-world location data. This becomes even more difficult when they need to test scenarios that involve very long distances or locations in different countries. Additionally, certain tests may need data from hard-to-reach places like remote mountain peaks or from situations involving high speeds. Addressing this gap, our research introduces a configurable location simulation tool. This tool eliminates the necessity for developers to physically obtain location data. Accompanied by a user-friendly web frontend for flexible location configuration, this tool acts as a wrapper for an Android device simulator, generating location data for evaluating location-based services within SOTI's applications. The tool features a straight-line mode, directly connecting waypoints, offering users complete control over route definition. For automated route generation, the Bing map APIs are utilized to generate the route between waypoints, further refined by a map-matching algorithm to match real-world paths. This location simulation tool is set to become an integral part of the development and testing life cycle for SOTI's products, improving the reliability of their location-based services and location-aware applications.

SOTI