Quadcopters Package Delivery System

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Abstract

Abstract of the project goes here

Figure 1: Figure caption

Introduction

One of the main economic and environmental concerns for package delivery arises within the last mile of transit. Often times deliveries are delayed at the warehouse so they may be grouped together to fill a truck's capacity. The truck is then responsible for delivering its entire payload by exhaustively traversing to each customer's house. This is not always the most efficient method and does not guarantee deliveries to be made in the least amount of time. Companies are exploring the use of small unmanned aerial systems (UAS) for local package deliveries in an attempt to minimize these inefficiencies and to offer rapid delivery services [1]. However, the effect this would have on the National Airspace (NAS) is mostly unstudied. In an attempt to study the traffic that would be produced, we aim to build a simulation that uses UAS vehicles flying at low altitude to deliver packages from local warehouses when requests are made. As we build this simulation we must assume certain parameters especially since this type of service is not yet offered. For the purposes of analyzing the air traffic on a larger scale, we will assume that the warehouse will manage ground level traffic for takeoff and landing purposes at the warehouse. When using small UAS vehicles, it is safe to assume this will not cause much change in the overall traffic of the simulation. Another assumption

Approach

- Data Collection - In order to simulate a more realistic data we collected San Jose terrain, population, Walmart, and K-12 school location. The data was provided from the United States Geological Survey (USGS), United States Census Bureau, Walmart.com, and Schooldigger.com, respectively.
- Initial Framework - We built a customizable environment in MATLAB Simulink focused around the warehouses chosen to have a fleet of UAS for delivery purposes. Walmart warehouses from the list collected could be chosen to be run in the simulation.
- Single Package Delivery -
- Multiple Package Delivery

OverView

OverView info goes here

Figure 4: Figure caption

System Model

System model equations and picture goes here

Results

Analysis

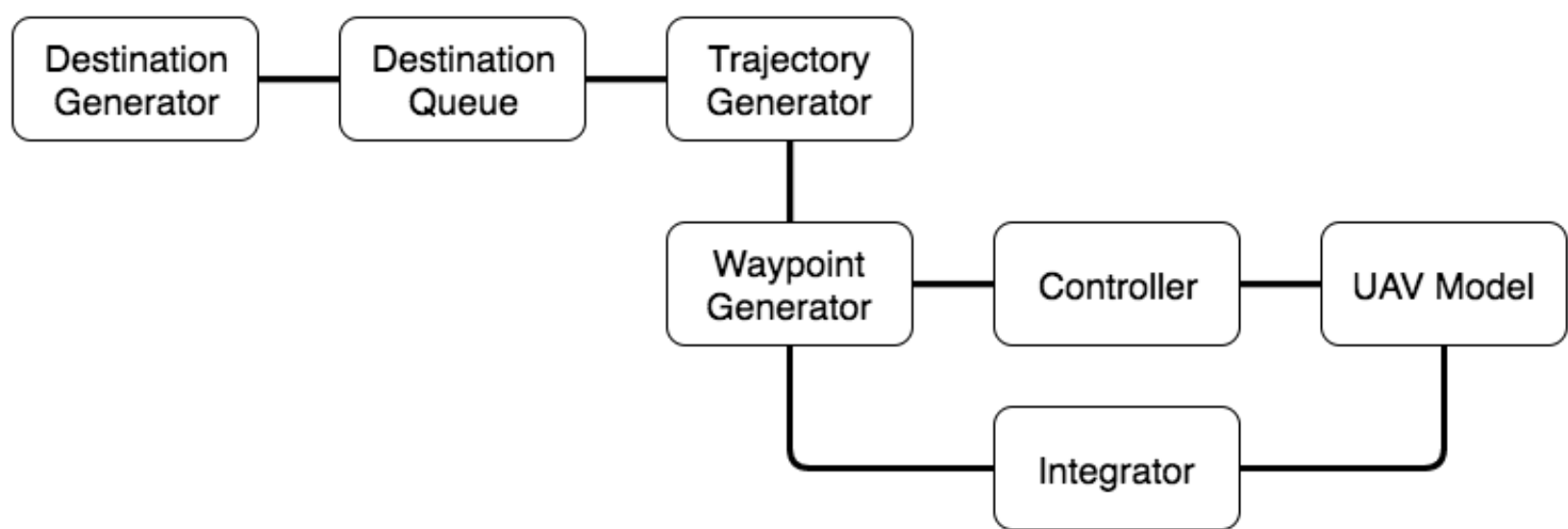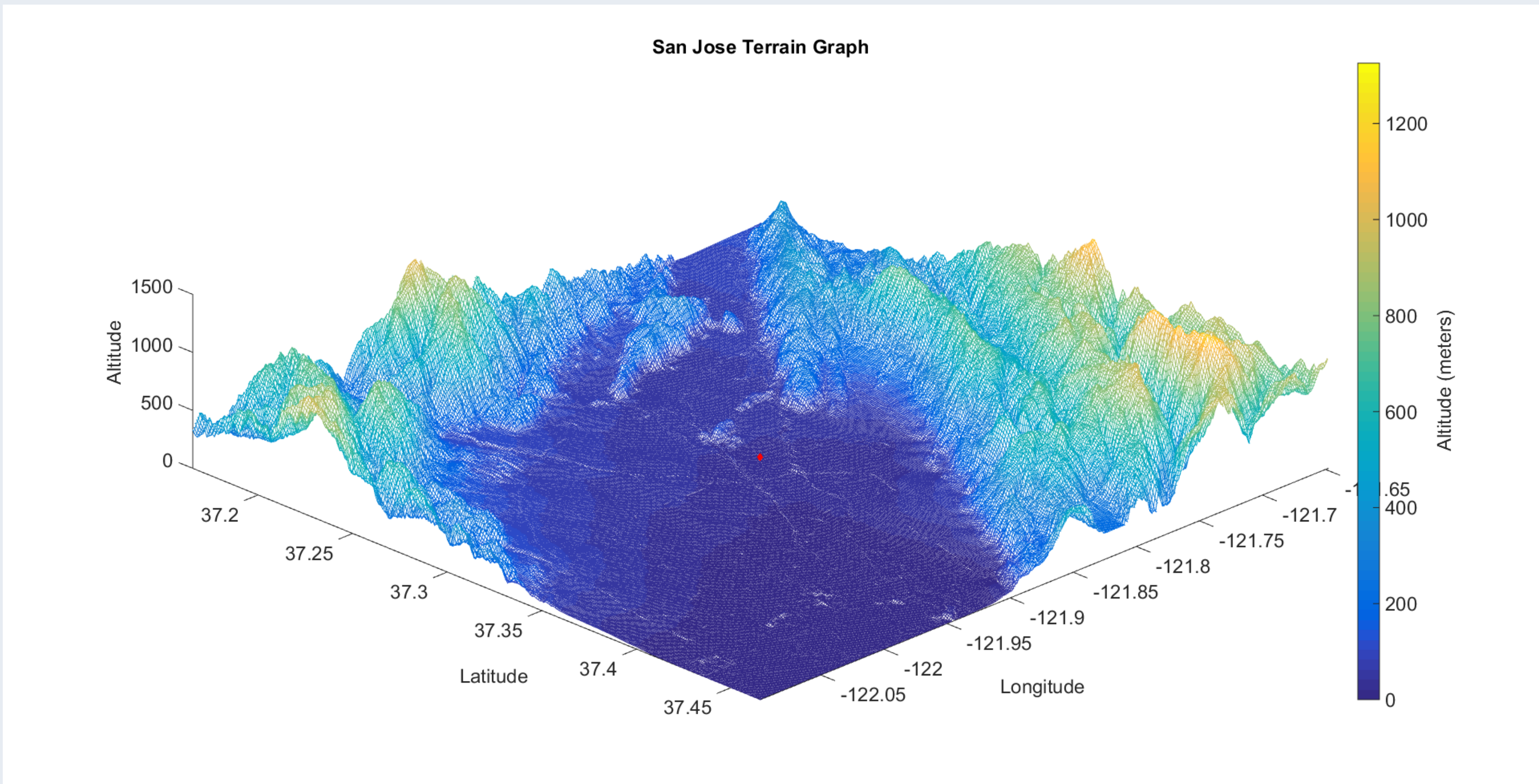**Analysis of the project.....Honestly I don't even know what goes here** *may be some bs?*

Figure 3: Figure caption

Conclusion

In order to show feasibility of Package delivery using drones, this project took a route in simulating ...

Additional Information

Add stuff here

- added stuff here

References

[1] A. B. Dacidson Helen and J. M. Smith. Dronedelivery service aims for take-off in november. *Journal title*, 2013.

[2]

[3]

Acknowledgements

Contact Information

probably don't need this

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