OFFICIAL ABSTRACT and CERTIFICATION

Short Term Traffic Flow Prediction Of The Cross Bronx Expressway by Monte Carlo Method

Anushka Patel
Mineola High School, Garden City Park NY, Nassau County

In major urban cities such as New York City traffic congestion is a major problem. Due to the restricted amount of roads due to lack of land and the rise of the human population especially in areas such as New York City where the situation is progressively getting worse. Traffic congestion remains a major problem. The Cross Bronx Expressway is ranked number 1 in the most congested U.S Roads in 2016. The congestion also has detrimental effects on the environment due to the vehicles emitting emissions that pollute the air. Additionally waiting in traffic also waste time,fuel, and money. In order to conclude suggestions to improve the traffic flow the predicted traffic flow count is a key parameter in handling traffic issues in relation to optimizing the flow. In order to predict traffic flow of the Cross Bronx Expressway the Monte Carlo method is used. It was found through this experiment conducted that the Monte Carlo method provided an accurate model for predicted traffic volumes which could help traffic operations account for the inherent variability of daily demand volumes.

Category
Pick one only—
mark an "X" in box
at right

Animal Sciences	☐
Behavioral & Social Sciences	☐
Biochemistry	☐
Biomedical & Health Sciences	☐
Biomedical Engineering	☐
Cellular & Molecular Biology	☐
Chemistry	☐
Computational Biology & Bioinformatics	☐
Earth & Environmental Sciences	☐
Embedded Systems	☐
Energy: Chemical	☐
Energy: Physical	☐
Engineering Mechanics	☐
Environmental Engineering	☐
Materials Science	☐
Mathematics	■
Microbiology	☐
Physics & Astronomy	☐
Plant Sciences	☐
Robotics & Intelligent Machines	☐
Systems Software	☐
Translational Medical Sciences	☐

1. As a part of this research project, the student directly handled, manipulated, or interacted with (check ALL that apply):

   ☐ human participants ☐ potentially hazardous biological agents

   ☐ vertebrate animals ☐ microorganisms ☐ rDNA ☐ tissue

2. I/we worked or used equipment in a regulated research institution or industrial setting: ☐ Yes ■ No

3. This project is a continuation of previous research. ☐ Yes ■ No

4. My display board includes non-published photographs/visual depictions of humans (other than myself): ☐ Yes ■ No

5. This abstract describes only procedures performed by me/us, reflects my/our own independent research, and represents one year's work only ■ Yes ☐ No

6. I/we hereby certify that the abstract and responses to the above statements are correct and properly reflect my/our own work. ■ Yes ☐ No

This stamp or embossed seal attests that this project is in compliance with all federal and state laws and regulations and that all appropriate reviews and approvals have been obtained including the final clearance by the Scientific Review Committee.