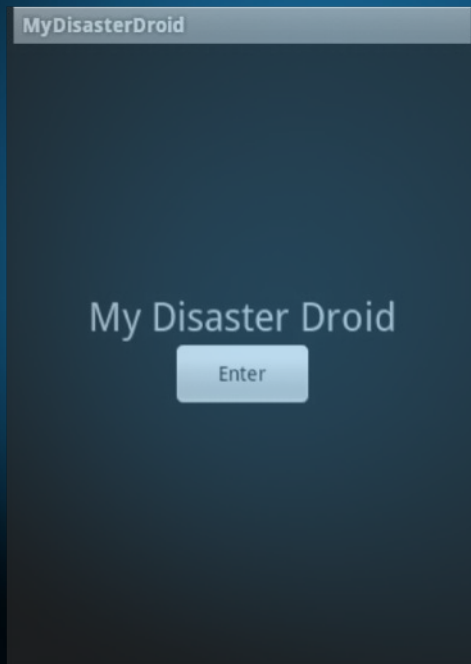


# Implementation of an Android-Based Disaster Management System

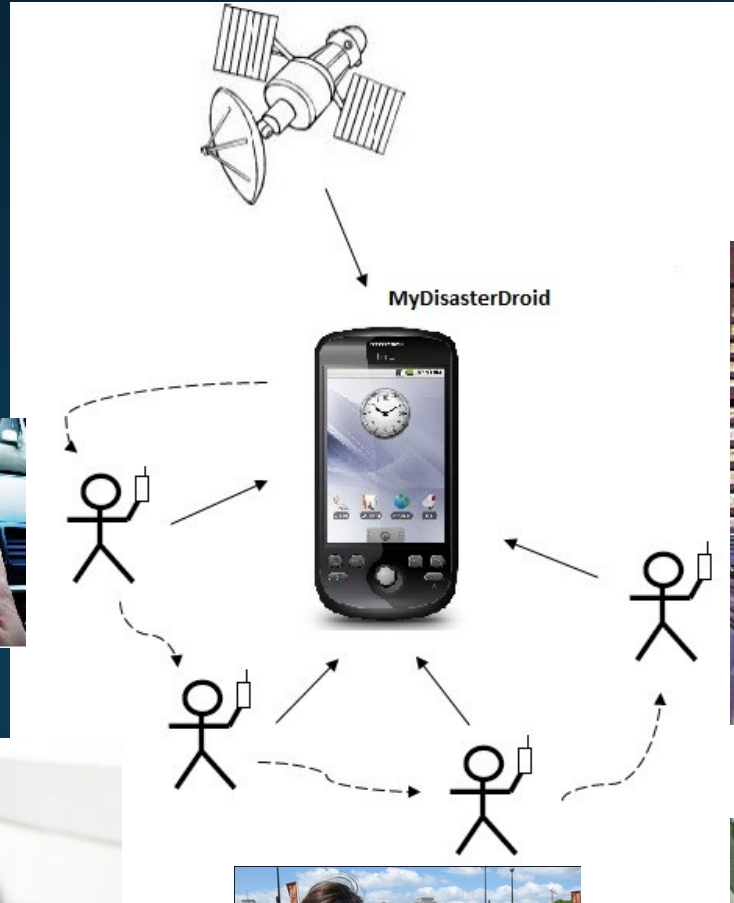
Jovilyn Therese B. Fajardo  
Carlos M. Oppus

Department of Electronics, Computer,  
and Communications Engineering  
Ateneo de Manila University  
Philippines





# MyDisasterDroid





# MyDisasterDroid



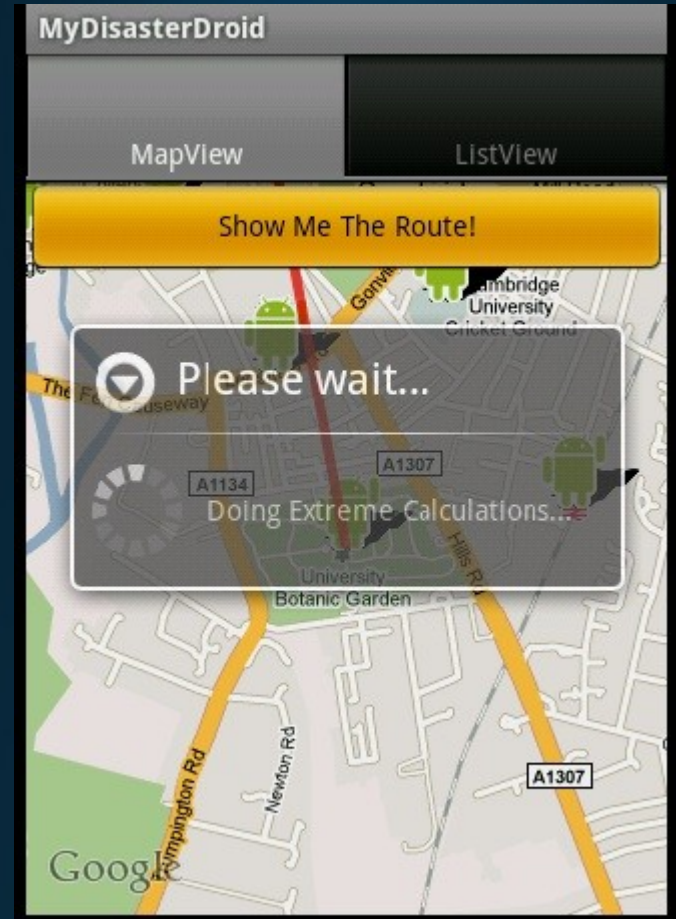


# MyDisasterDroid





# MyDisasterDroid





# MyDisasterDroid

MyDisasterDroid

MapView      ListView

Show Me The Route!

This screenshot shows the 'MapView' interface of the MyDisasterDroid application. At the top, there are two tabs: 'MapView' (which is selected) and 'ListView'. Below the tabs is a button labeled 'Show Me The Route!'. The main area is a Google Map of a city, likely Manila, with several green Android robot icons placed at various locations. Red lines connect these icons, forming a path across the city. The map includes labels for various landmarks and transportation routes, such as 'Central Ave', 'Commonwealth Ave', 'Loyola Heights', and 'MRT-3'.

MyDisasterDroid

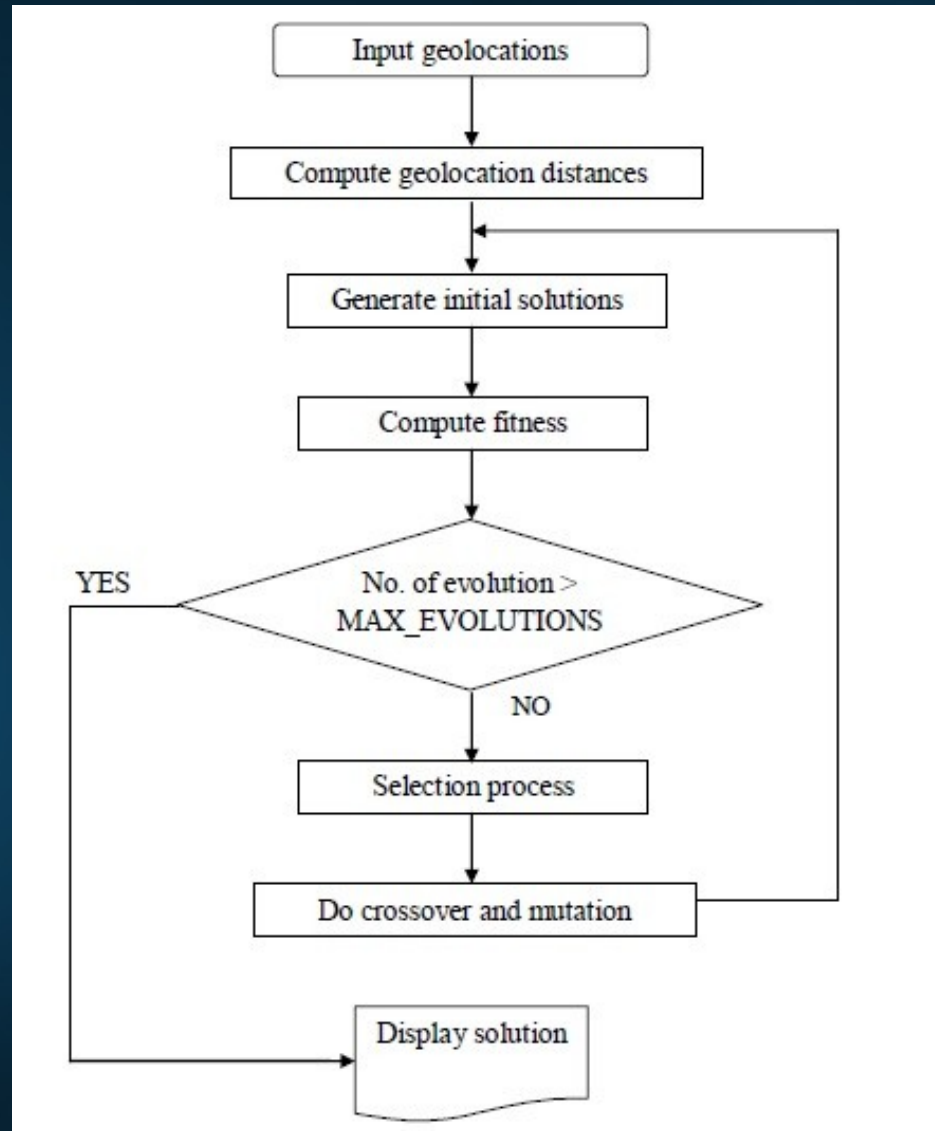
MapView      ListView

Show Me The Route!

This screenshot shows the 'MapView' interface of the MyDisasterDroid application, similar to the first screenshot. It features the same 'MapView' and 'ListView' tabs and the 'Show Me The Route!' button. However, the red lines connecting the green Android robot icons on the map form a different path, illustrating a different route calculation. The map labels and background are consistent with the first screenshot.



# MDD GA Implementation





# Results

| <b>Location Name</b> | <b>Latitude,<br/>microdegrees</b> | <b>Longitude,<br/>microdegrees</b> | <b>No. of People<br/>In Need</b> |
|----------------------|-----------------------------------|------------------------------------|----------------------------------|
| Anonas               | 14627648                          | 121064896                          | 5                                |
| Home                 | 14638115                          | 121076119                          | 0                                |
| LRT Station          | 14630887                          | 121061291                          | 15                               |
| Maginhawa            | 14640437                          | 121061291                          | 10                               |
| Memorial Circle      | 14650734                          | 121049447                          | 5                                |
| Miriam               | 14643759                          | 121077320                          | 5                                |
| Provident            | 14627814                          | 121093046                          | 20                               |
| UP                   | 14652560                          | 121065048                          | 12                               |

**MyDisasterDroid Sample Geolocations**



# Results

| <b>Location Name</b> | <b>Latitude,<br/>microdegrees</b> | <b>Longitude,<br/>microdegrees</b> | <b>No. of People<br/>In Need</b> |
|----------------------|-----------------------------------|------------------------------------|----------------------------------|
| Anonas               | 14627648                          | 121064896                          | 5                                |
| Home                 | 14638115                          | 121076119                          | 0                                |
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| Memorial Circle      | 14650734                          | 121049447                          | 5                                |
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| Provident            | 14627814                          | 121093046                          | 20                               |
| UP                   | 14652560                          | 121065048                          | 12                               |

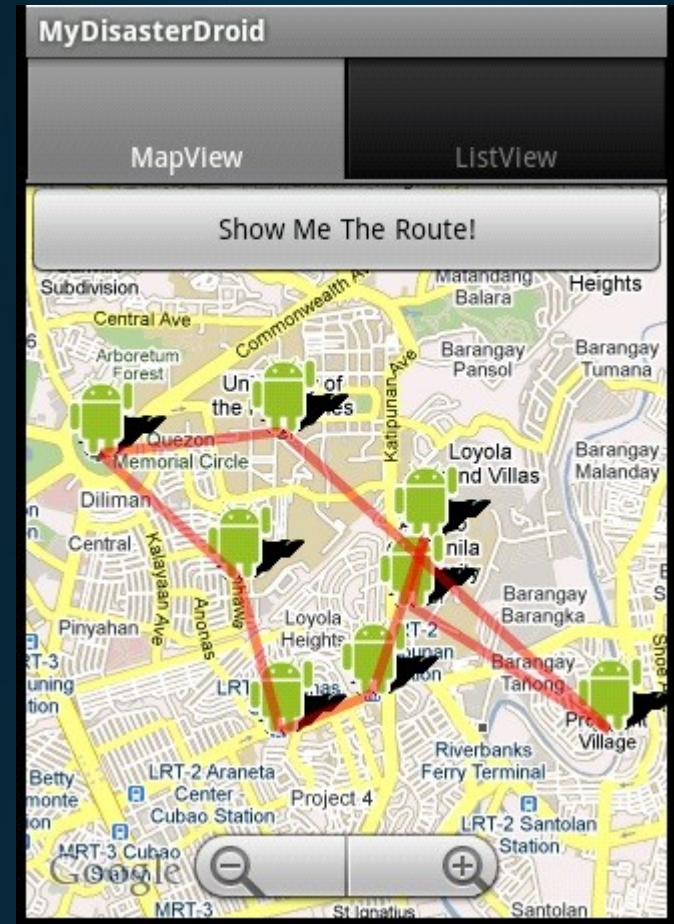
**MyDisasterDroid Sample Geolocations**



# Results



NO. OF EVOLUTIONS = 5



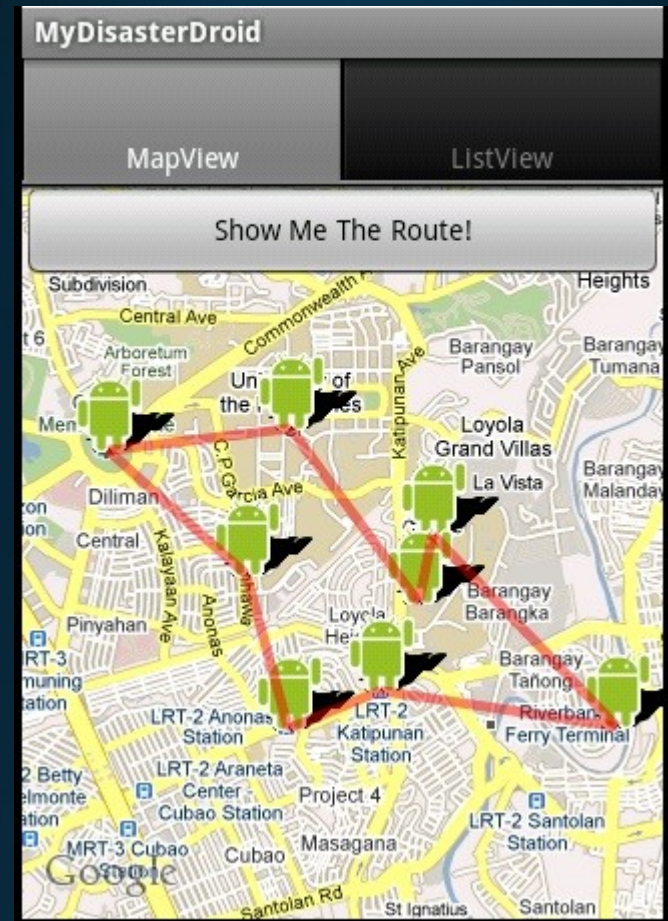
NO. OF EVOLUTIONS = 10



# Results



**NO. OF EVOLUTIONS = 20**



**NO. OF EVOLUTIONS = 30**



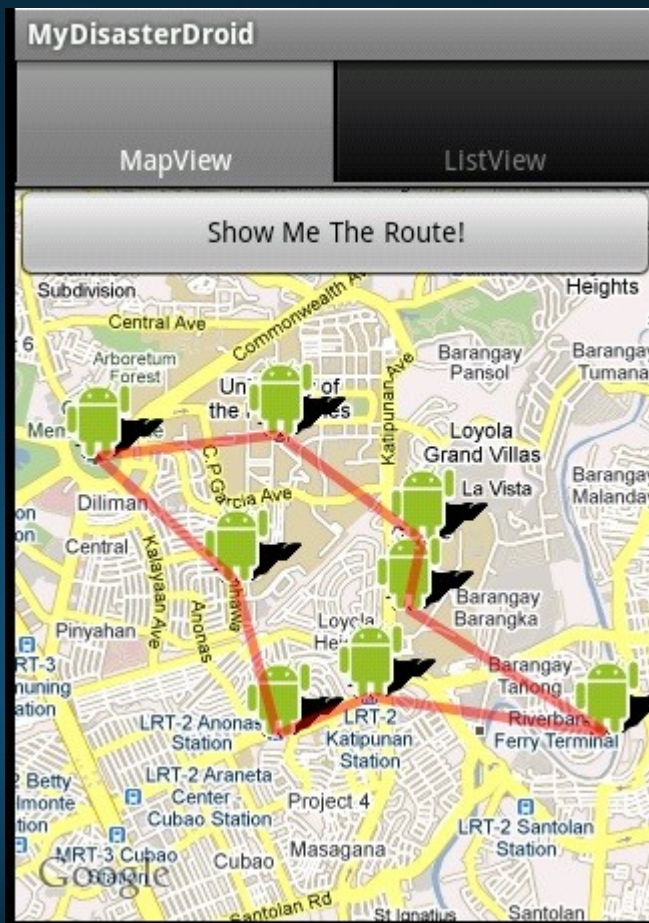
# Results



**THRESHOLD SELECTOR**



# Results



**TOURNAMENT SIZE = 50**



**TOURNAMENT SIZE = 20**





# Results



**PRIORITY: PEOPLE IN NEED**



# Summary

- Implemented an Android-based disaster management system (MyDisasterDroid)
- Implemented a genetic algorithm-based route planning mobile application
- Different genetic operators were varied for use in a mobile environment
- Incorporated prioritization
  - Based on a closer location
  - Based on the number of people in need



# Acknowledgements

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