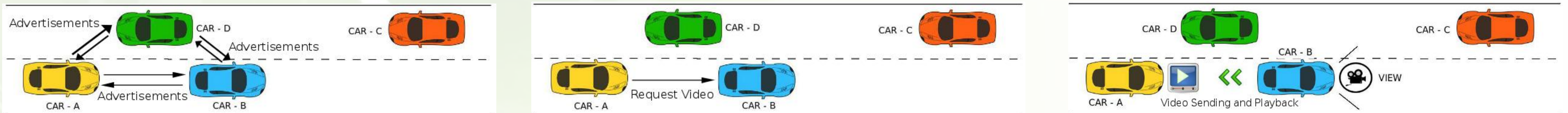


# A Real-time Visual Overtaking Aid Using Smartphones

Subhadeep Patra, Carlos T. Calafate, Juan-Carlos Cano and Pietro Manzoni  
Department of Computer Engineering, Universitat Politècnica de València, Spain.

## Application Overview

- Aims at helping in safe overtaking by providing real-time video stream from the car ahead.
- Especially useful when the front view of the driver is blocked by large vehicles.
- Targeted towards Android devices that possess GPS and back camera.



- The working of the application can be explained in three steps:
  - The first step involves the broadcast of advertisements by servers.
  - In the next step the client request the video feed from the server.
  - Finally, the server in response, starts to stream the video.

## Validation Tests

• Real cars were used and driven around the Universitat Politècnica de València.

• Conditions used to start and stop video streaming: the same direction test, the same lane test and the overtake test, were evaluated.

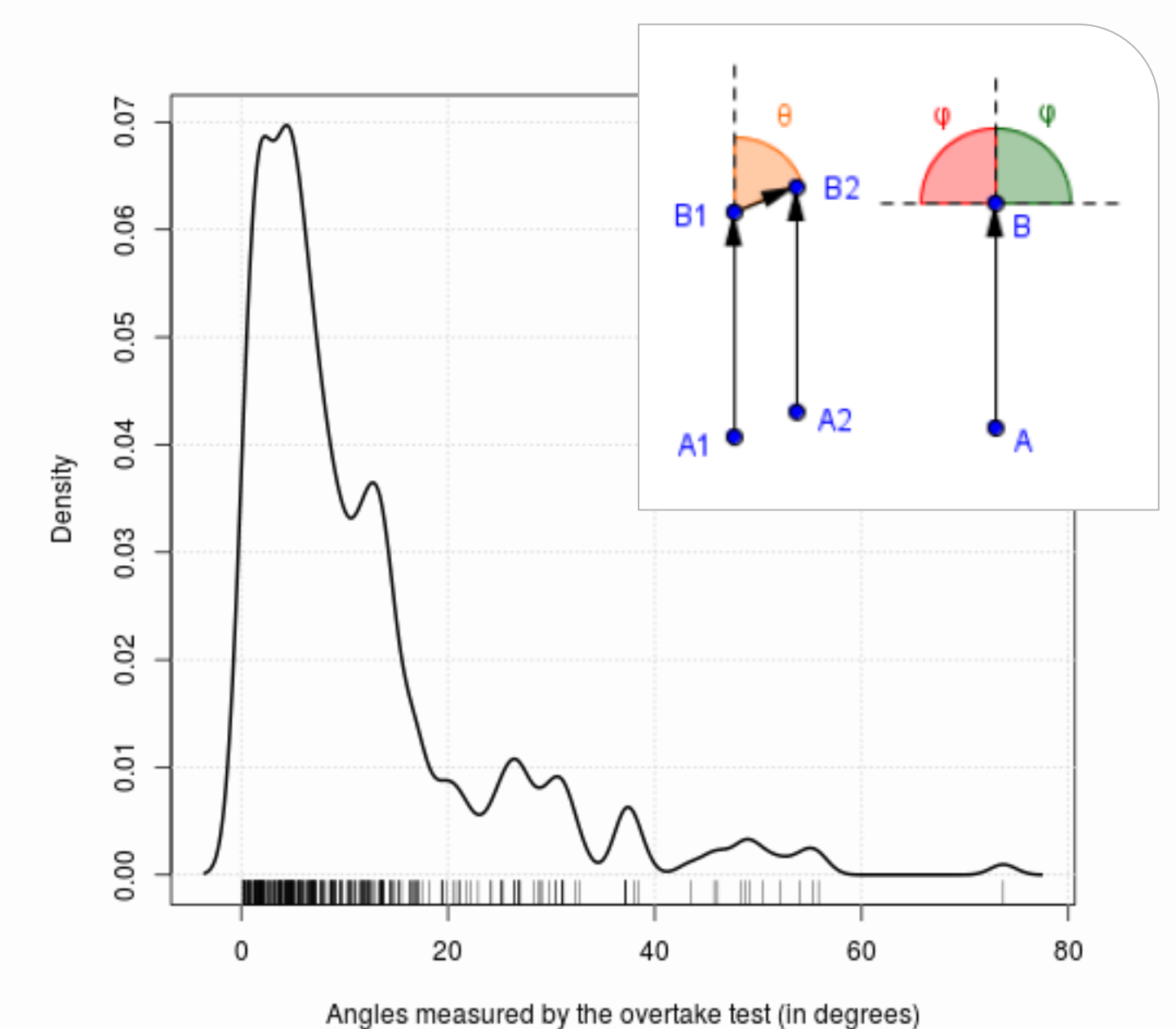
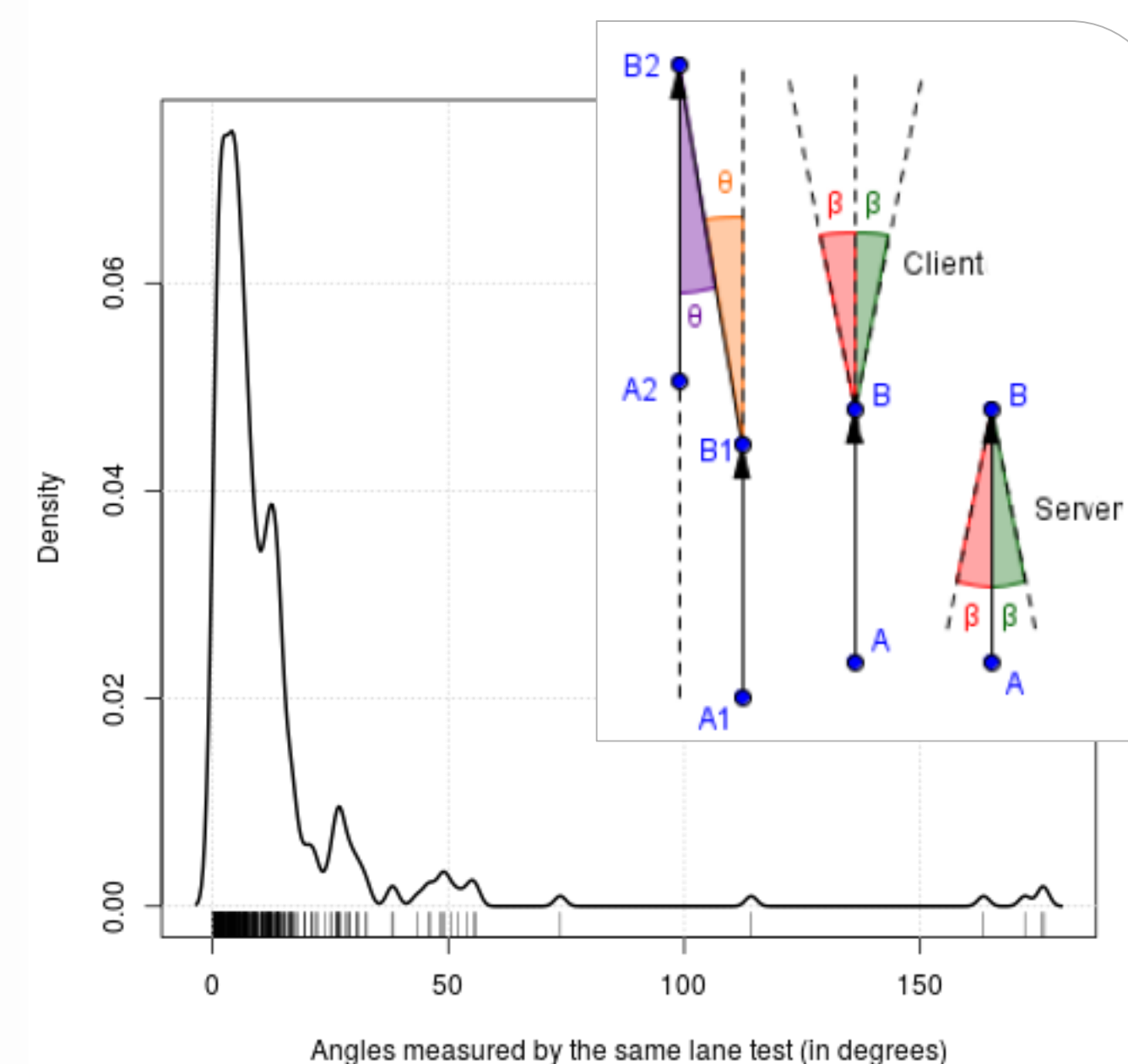
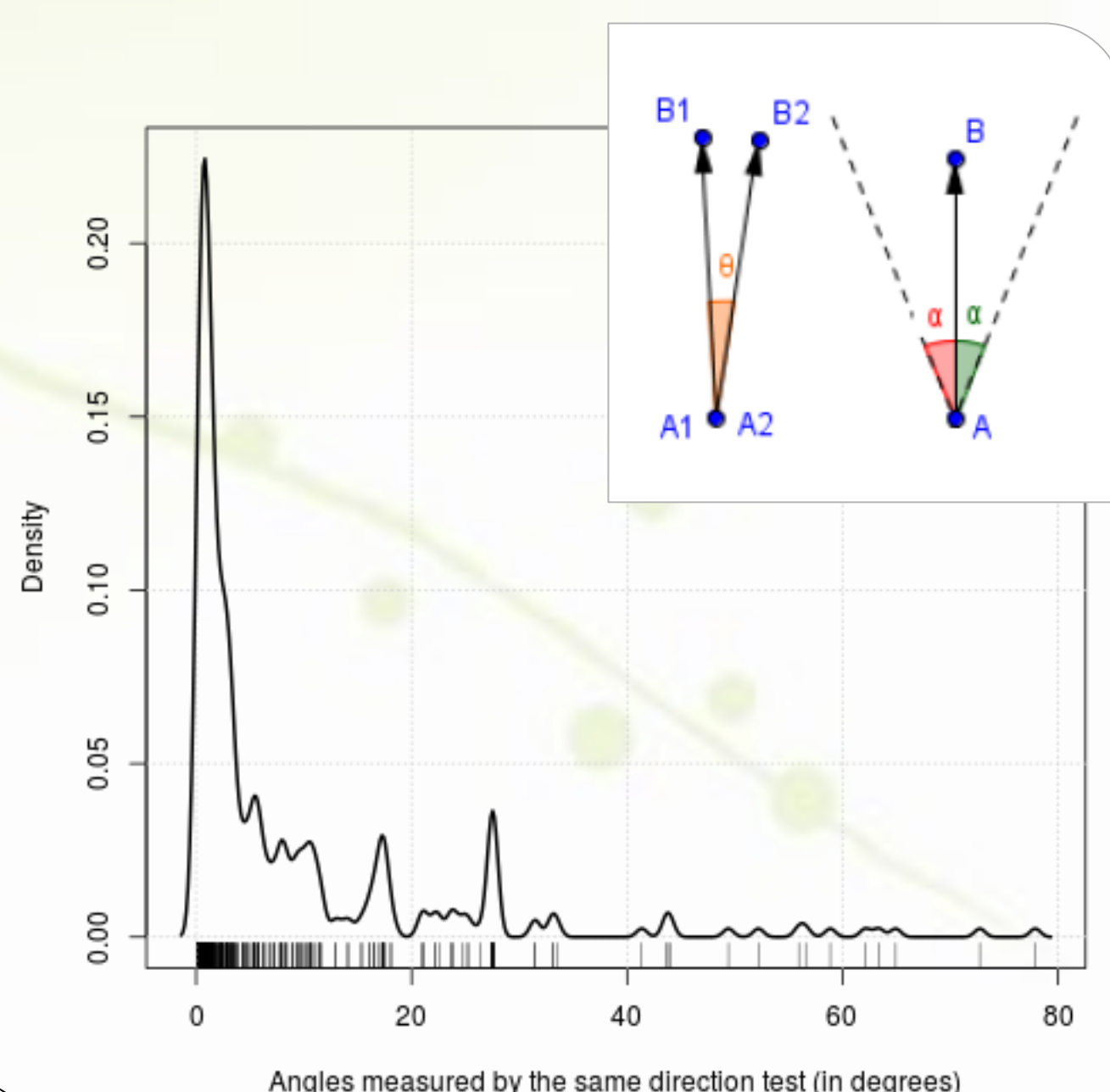


The video from the car ahead being played

GRCBox used to create the vehicular network

Cars in the opposite direction

Car ahead transmitting video using EYES



## Conclusions

- The developed application works correctly providing real-time video stream for overtaking.
- Threshold values of  $20^\circ$  for the same direction test &  $90^\circ$  for the overtake test were found.
- The results allow being optimistic about the effectiveness and applicability of the solution.



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