Mobile paper review

# Some guideline

1. We must address all the criteria listed by 1AE(primary reviewer). Failed to do so will get our paper rejected unless compelling reasons are provided as part of the resubmission.
2. We can send anonymous emails to 1AE if we need further clarification of any review.

# Major problems by meta review: accuracy & generalization

1. How the data is collected:
   1. Who were involved: a major mobile carrier, all active 2G users during the three-hour period
   2. How long the data was collected: three-hour period

the length of the data trace (3 hours) seems short - it would be good to explain why the authors feel this is an appropriate amount of data to analyze.

* 1. When was it collected: we have timestamp?
  2. Is it cell only or with wifi: cell only
  3. culture and type of user: limited area, only three cities in china. Especially for Fig 13 ~ 15 (speed vs. unique apps used, app switch frequency, number of concurrent apps), their results are not meaningful for understanding general patterns. The authors need to describe the limitation of their analysis and method.

1. Generalization:

The authors should address the generality of the proposed algorithm as a limitation. Generally, smartphone users use both cellular and wifi networks in other areas. The current analysis model excludes many contexts of users such as location, time, individual context, etc. In order to understand the resulting data, it is very important to know about moving speed with respect to users and their culture.

The authors should discuss or demonstrate the implications of considering cellular traffic only on the results presented in this work. WiFi usage could be a major limitation of the generalization of the study.

* 1. Reviewer 1: The contexts users use their smartphones are blurred with moving speed.
     1. Location
     2. Time
     3. Only for users who frequently moved and use smartphones
     4. Difference between inter-cell moving and staying within a cell
  2. Reviewer 2: How to incorporate wifi data  
     How representative are the results presented in this work given the fact that they consider cellular app usage and traffic only?

The authors should discuss or demonstrate the implications of considering cellular traffic only on the results presented in this work.

1. Prove speed estimation accuracy
   1. The authors should demonstrate that their approach to estimate intra-cell movement speed is accurate. It is possible that to some extent the insights presented in this work result from the inaccurate movement speed estimations.
      1. Addressing this shortcoming might for instance include an evaluation of the approach on a data set that contains GPS and cellular data. There are several publicly available data sets that might be helpful at this stage (reality mining, nokia, lifemap, etc.).
      2. Running a small custom study  
         Even a simple study with 20 users where ground truth and cell records were collected would be sufficient.
   2. any assumptions in estimating moving speed are made without much explanation. These assumptions should be proved and discussed in detail.
      1. users move with a constant speed (4.1)
      2. straight line trajectory (4.3)
   3. the classes of moving speed should be analyzed and discussed in detail.

# Other Major problems:

1. The authors should describe how the massage smartphone usage data were dealt. Any tools and environments?
2. Providing stronger / additional arguments why all the other observations are relevant would help the authors to increase the value of this work.

There are many ways to target user interests and it is not obvious that an approach based on speed is appropriate. If there is no evidence to support the use of speed in targeted adverts then I would have preferred to have seen the approach based as a generic analysis with a range of possible applications being suggested.

# Minor problems:

1. Figs and listings one the same page with related text
2. Inconsistent writing of PBE in Sec 4.1 and Sec 4.2
3. Potential naming (variables) inconsistencies between Alg1 and Sec 4.2
4. Fig10a y-axis label: is it not supposed to be “bytes/sec” as explained in the corresponding section?
5. Sec 5.3: how do you define “a data access”. is it a single CDR in the data set?
6. What is the overall value / take-home message of Fig11 and Fig12? Is it not better to have relative values if the number of instances differ?
7. Fig14 and Fig15 should be a bit smaller to match the font size of the text

# Suggested References:

[1] Kyunghan Lee,Joohyun Lee,Yung Yi,Injong Rhee, and Song Chong. 2013.

Mobile Data Offloading: How Much can WiFi Deliver? IEEE/ACM Transactions

On Networking 21, 2 (2013), 536–551.

[2] Paul Baumann and Silvia Santini. 2014. How the availability of Wi-Fi

connections influences the use of mobile devices. In Proceedings of the

2014 ACM International Joint Conference on Pervasive and Ubiquitous

Computing Adjunct Publication - UbiComp ’14 Adjunct. (2014), 367–372.