Measuring the wireless network latency in a moving train: Fun project

***Abstract*—Ever wondered what to do in the long train trip? Of course, measure the packet latency to a selected server in the Internet and plotting the data after interpolation on the map. Fun? Yes it is. Wonder what I have got on my trip from Helsinki to Tampere keep on reading.**

I. Introduction

II. Data collection methodology

We have used MacBook ability to pick up the GPS coordinates from the iPhone to get the current position (latitude and longitude), current timestamp from the date utility and mean value from the batch of 4 ICMP ping requests. For that we have used the following script:

```
#!/bin/bash

while True;
do
   location=`corelocationcli`
   time=`date +%s`
   p=`ping strangebit.io -c 4 | grep round | awk -F "=" '{print $2}' | awk -F "\/" '{print $2}'`
   echo "$time $location $p" | tee -a m.log
   sleep 4
done
```

We have collected a long trace for the entire journey from Helsinki to Tampere. We then interpolated the data using the linear interpolator and plotted the results on the map. Since the delay between consequtive measurements was 4 seconds we have have interpolated the date using the following formula: $t \in \{0.1, 0.2, \dots 1\} x_t = A + (B - A) * t$ The source code of the stuff is here [1].

III. Data processing and basic results

IV. Conclusions

References

[1] Fun stuff in the train. https://github.com/dmitriykuptsov/train-rtt.