

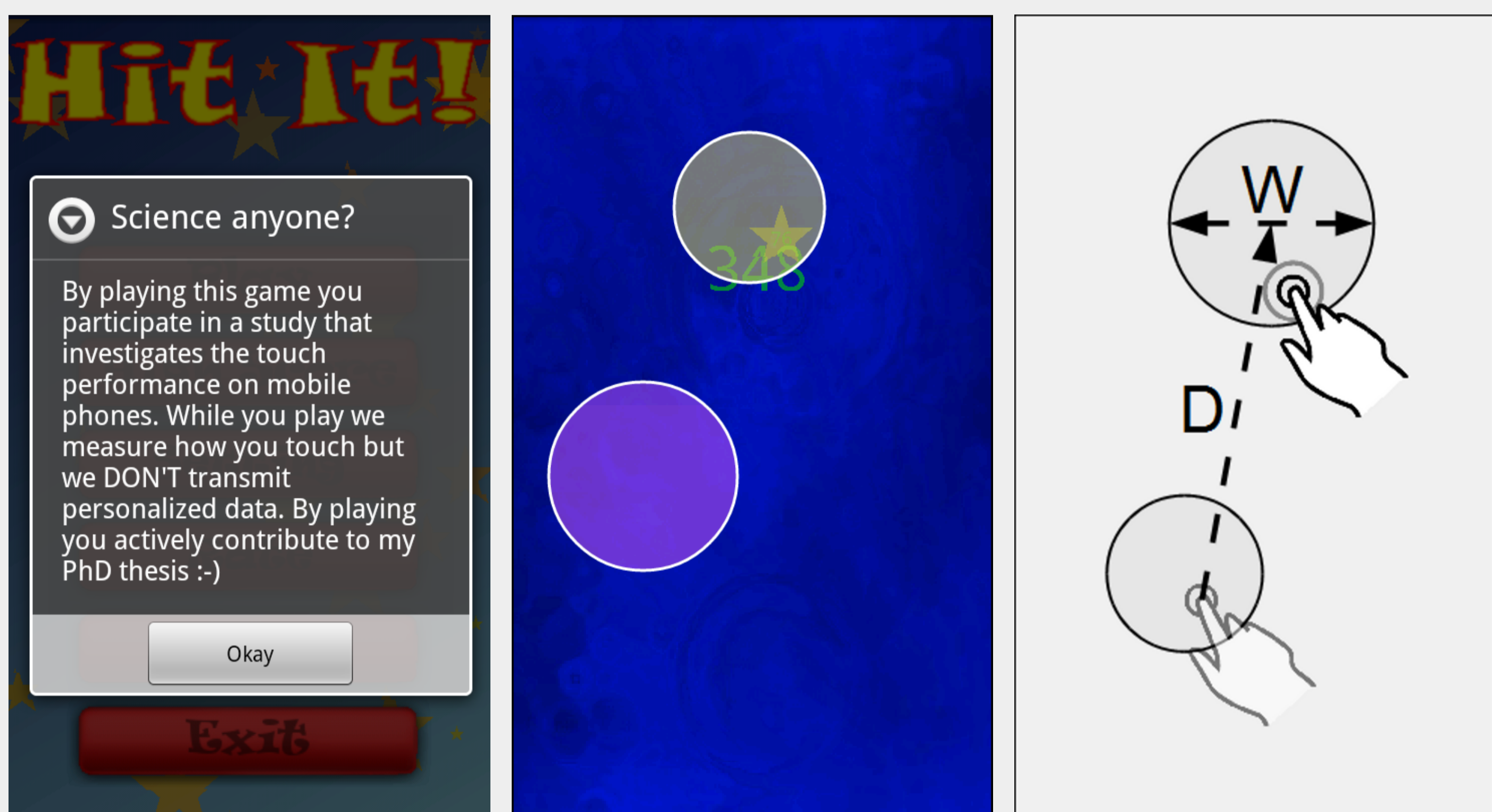
It does not Fitts my data!

Analysing large amounts of mobile touch data



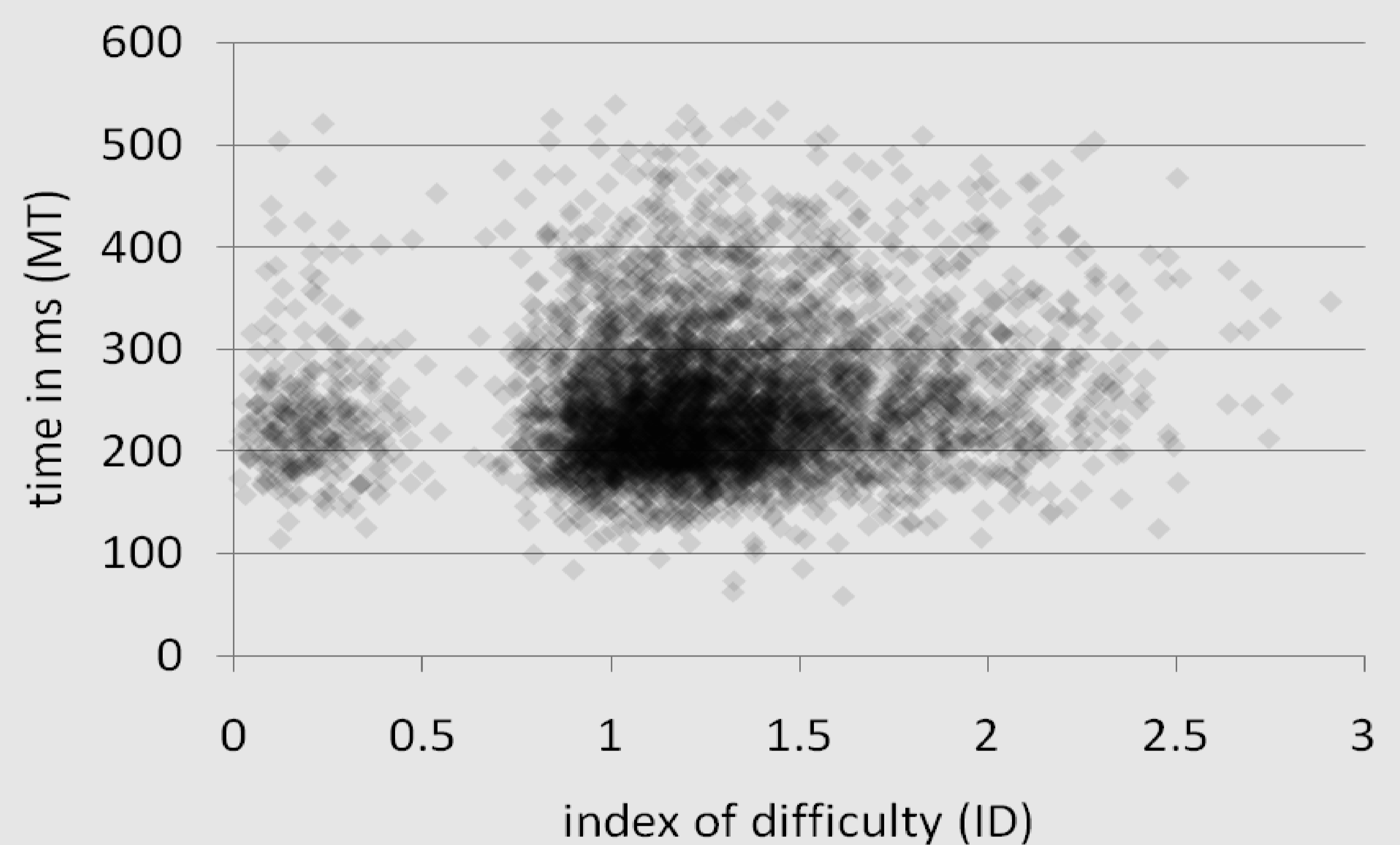
Bubble touching tasks

We developed a game for Android to collect large amount of touch data. A part of the game is designed as what we expected to be a **Fitts Law task**. Players have to tap on circles as fast as possible. We randomize the targets position and size. Publishing the game in the **Android Market** we collected **5,359,650 tasks** from 63,154 users.



Applying Fitts' law

Determining a (intercept) and b (slope) we found that $a=.20$ and $b=.04$. Correlation is $r=.14$ and index of performance is $IP=25.01$. Regardless how we constrain the dataset, **IP is unlikely high and the correlation is weak.**

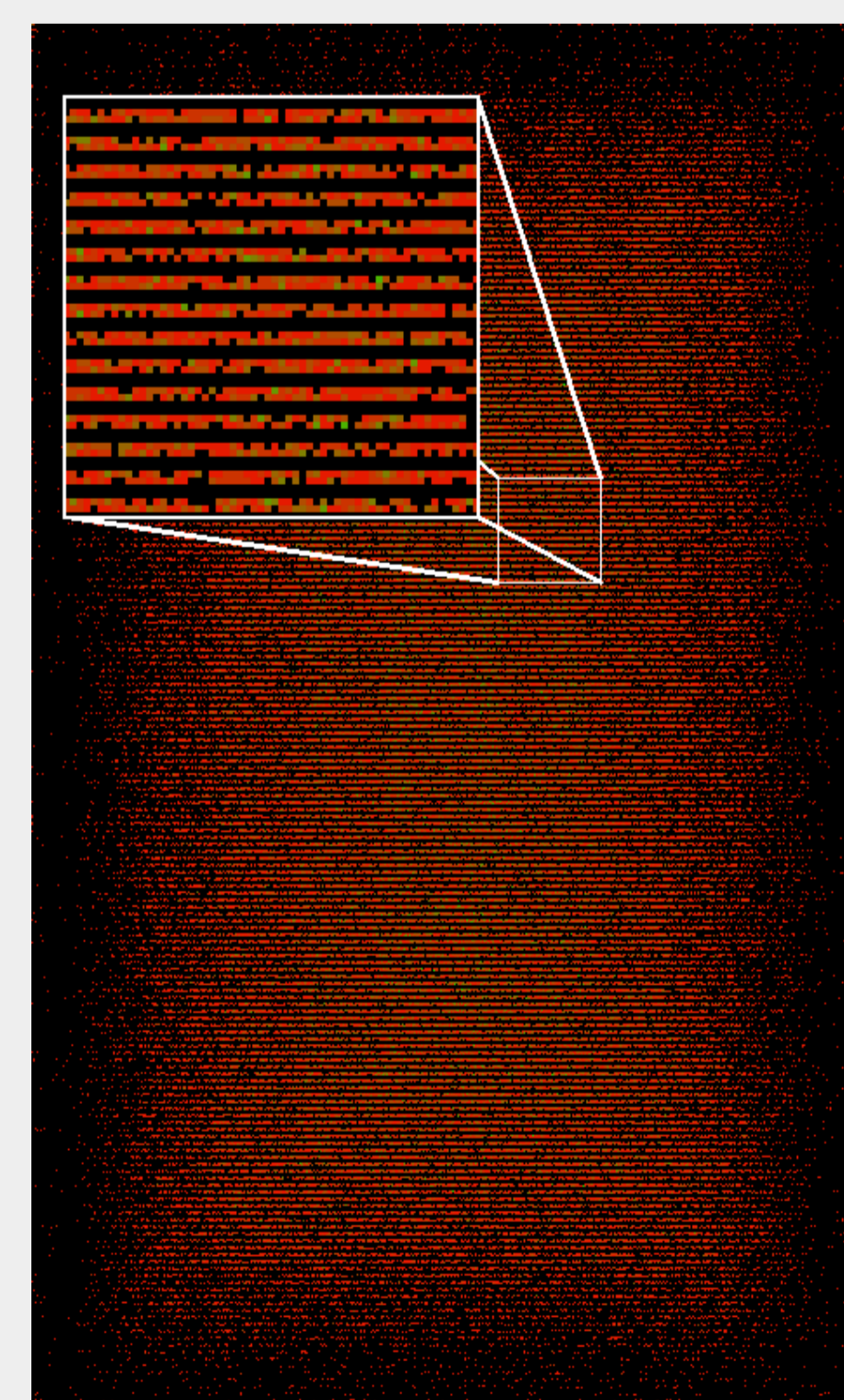


Not a Fitts' Law task?!

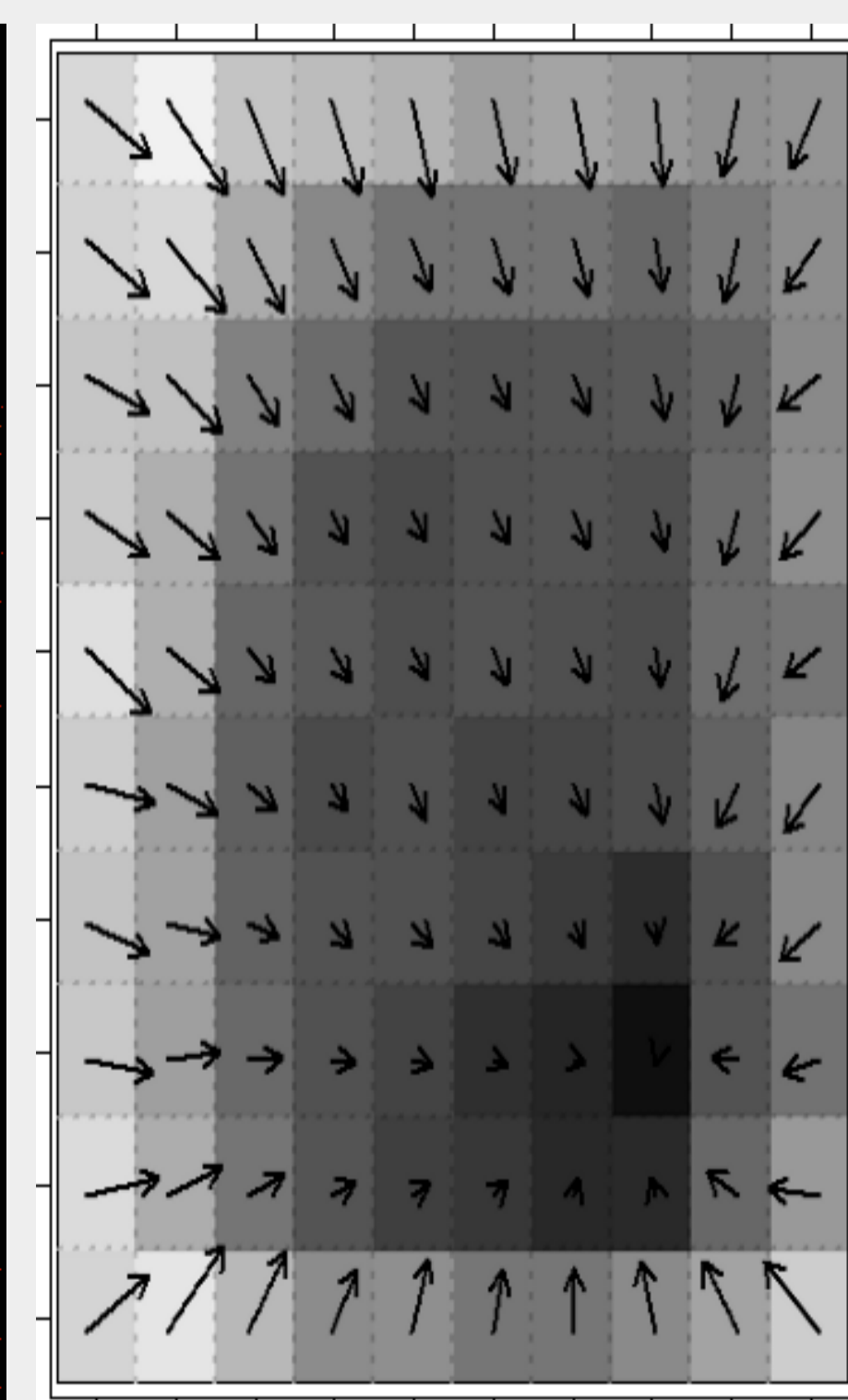
To investigate why Fitts' law isn't a model for our data we tested the correlation with the targets' width and the distance to the target independently. Using data from one type of device the **correlation between time and distance** is $r=.33$. Correlation is the **same as with Fitts' law**. The same amount of variance can be explained by the correlation with ID and the correlation with the distance to the target. Testing different functions (e.g. $\log_2(W)$, $1/W$, $\log_2(1/W)$) does not reveal a higher correlation.

There is more in the data...

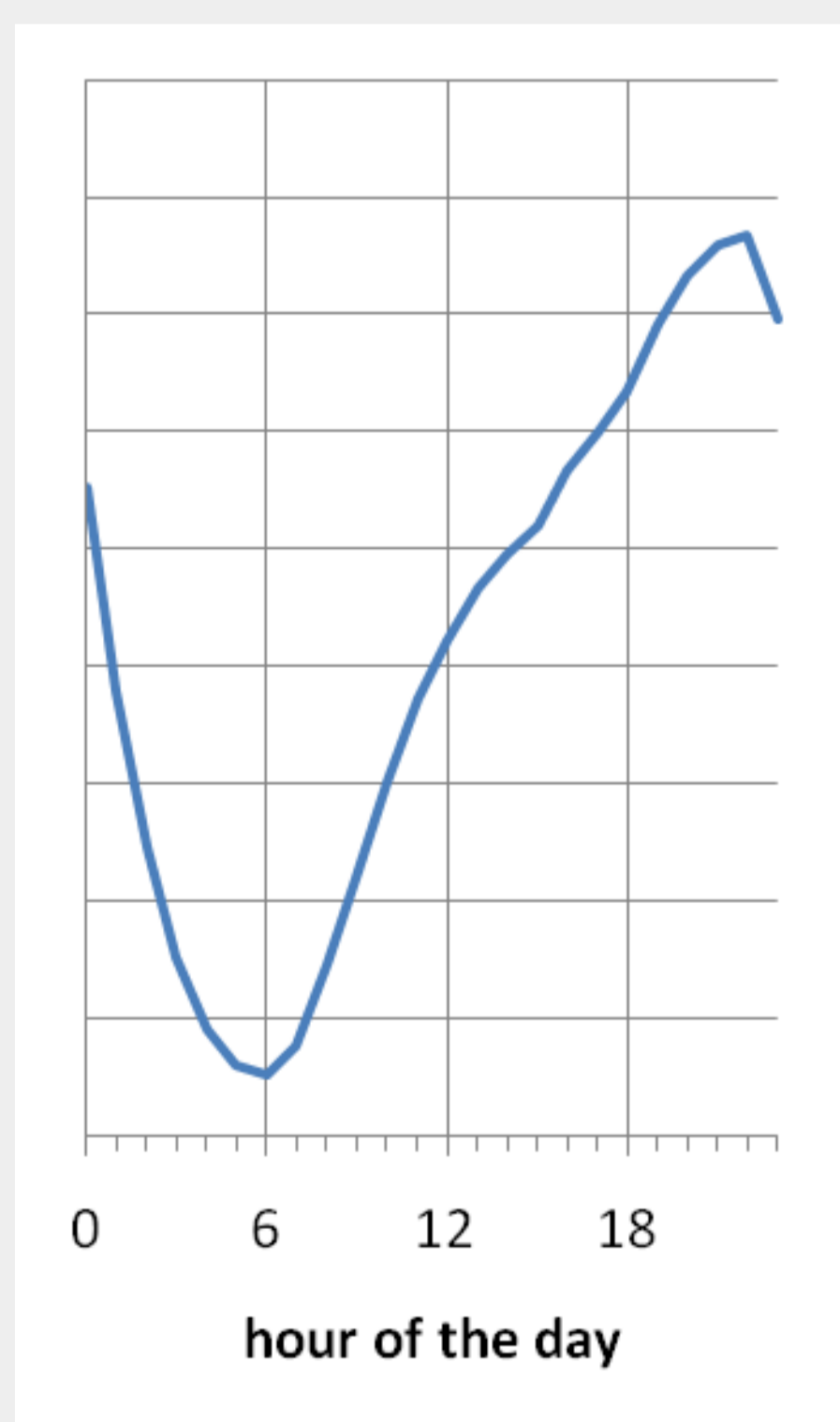
More aspects can be investigated using the data. We found devices with probably **faulty touchscreens** [1], determined a **skew in the touch distribution** that can be compensated [2], and analyzed **when people install games** to find the best time to submit apps to the Android Market [3].



[1] Does the touchscreen of your Galaxy S suck? <http://nhenze.net/?p=831>



[2] N. Henze, E. Rukzio, S. Boll: 100,000,000 Taps: Analysis and Improvement of Touch Performance in the Large. MobileHCI, 2011



[3] N. Henze and S. Boll: Release Your App on Sunday Eve: Finding the Best Time to Deploy Apps. Adj. proc. MobileHCI, 2011

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