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Project Turns GPS Phones Into Traffic Reporters

Posted by timothy on Fri Nov 07, 2008 06:42 AM
from the then-it's-mandatory dept.

narramissic writes *"Starting on Monday, researchers from Nokia and UC Berkeley will kick off the Mobile Millennium project. The researchers hope that thousands of volunteers will download a free Java program that figures out by their movement and location when they are driving, and then transmits that information to the project's servers, which then crunch it into a Bay Area traffic map. 'The whole concept here is that if everyone shares just a little bit of what they're seeing ... then everyone can benefit by seeing the conditions ahead of them,' said Quinn Jacobson, a research leader with Nokia in Palo Alto."*

+ -

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Submission: Project Turns GPS Phones Into Traffic Reporters by narramissic (997261)
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- ›

The privacy post (Score:5, Insightful)

by Max Romantschuk (132276) <max@romantschuk.fi> on Friday November 07 2008, @06:48AM (#25673923) Homepage

I'm sure the data is anonymized, but how well? Will people be comfortable with having their phone track

them? Anyone know? Didn't RTFA yet... ;)

○

○ **Re:** (**Score:2**)

by Kagura (843695)
Until we arrive at an overtly panoptic government, I wouldn't mind volunteering for my data to be shared if it helps.

■

■ **Re:** (**Score:2**, Interesting)

by ZankerH (1401751)

Until we arrive at an overtly panoptic government, I wouldn't mind volunteering for my data to be shared if it helps.

I can certainly see this being used to help the traffic control police - aka revenue generator.

■

■ **Re:The privacy post** (**Score:5**, Insightful)

by HungryHobo (1314109) on Friday November 07 2008, @07:48AM (#25674235)

If this became a big thing and my company maintained a toll road then I'd be looking for ways to create phantom "traffic jams" on alternative routes. This sounds like a trust based system.

Parent

■

■ **Re:** (**Score:2**)

by wisty (1335733)
Oh god, this could really be exploited. Just set up a horde of customized clients to "block" the route you want to take ... not that I would approve of such behavior

■

■ **Re:** (**Score:2**)

by esampson (223745)

I would imagine it wouldn't be too difficult for the system to recognize that certain senders are giving bogus data, especially if this became a big thing. You have to do things like that because even honest users will occasionally send bad data, either because their GPS gets a bad fix or because their car breaks down. Once the system realizes someone is sending bad data it can keep an eye on them. If they continue to send lots and lots of bad data then it just stops paying attention to them altogether.

- **[Data and text costs make more.](#)** (**[Score:2](#)**)

  by [Joe The Dragon (967727)](#)

  Data and text costs make more.

- **[Who would be dumb enough to download this?](#)** (**[Score:5](#)**, **Funny**)

  by Anonymous Coward on Friday November 07 2008, @07:58AM ([#25674297](#))

  considers existence of FaceBook

  Nevermind.

  [Parent](#)

  - **[Re:](#)** (**[Score:2](#)**)

    by [Max Romantschuk (132276)](#)

    considers existence of FaceBook

    Nevermind.

    Then again, on Facebook you do get to choose what information you share about yourself. Might not be the case if you have an app posting info about you automagically...

  - **[Re:Who would be dumb enough to download this?](#)** (**[Score:4](#)**, **Interesting**)

    by [afidel (530433)](#) on Friday November 07 2008, @10:24AM ([#25675789](#))
    Actually I'm hoping Google adds this to Google Maps Mobile. Currently they use the

commercial traffic services for data which means a delay of 15-30 minutes typically in getting notification about traffic jams, with realtime data from actual commuters they could provide MUCH better data. This would save me hundreds of hours per year. The government can already track you through the cellular network and Google would not turn the individual user data over to anyone else, so why wouldn't I participate?

Parent

- ■

- ○ **Re:The privacy post** (**Score:5**, Interesting)

  by Dan541 (1032000) <`Dan' `at' `danscomp.net'> on Friday November 07 2008, @08:01AM (#25674329)

  Forget privacy, who is going to pay for this wireless data?

  Why would someone sacrifice their battery life just for another to benefit.

  Parent

  - ■

    - ■ **Re:The privacy post** (**Score:5**, Insightful)

      by Anonymous Coward on Friday November 07 2008, @08:14AM (#25674421)

      That's no problem. The idea is that you benefit from the information which emerges from the aggregated data. Kind of like other community projects, for example CDDB or Wikipedia. You feed a small piece of information into the system and get the service of the whole system back.

      The thing to watch out for is: **Who owns the data?** Are you really just jumpstarting a commercial enterprise which will later turn the free service into a product or serve your data back to you with ads, while you are forbidden to use the database for your own purposes?

      Parent

      - ■

        - ■ **Re:** (**Score:2**)

          by cellurl (906920)
          I completely agree. I also question slashdot's motives at promoting Nokia. Ok, here goes: I am promoting this: Its free now, but probably not later. I suck! http://www.wikispeedia.org/ [wikispeedia.org] Here's another item I am promoting. Its not free but useful. Slashdot won't cover it. http://www.gpscruise.com/

[gpscruise.com] What do you think? -jim

■

Did u **(Score:2)**

by drachenstern (160456)

Eh, what? Where did they promote Nokia? Because Nokia's part of the summary due to they are in the article?

Enlighten me how they're promoting please...

But on with the show. Cute network, cute device. What's the lifetime on the site you reckon? 5 years? Honest answer please.

■

Re: **(Score:2)**

by thePowerOfGrayskull (905905)

http://www.wikispeedia.org/ [wikispeedia.org] Here's another item I am promoting. Its not free but useful. Slashdot won't cover it. http://www.gpscruise.com/ [gpscruise.com] [gpscruise.com] What do you think? -jim

I look at the first and I think "um, okaaaay... what's the point? I can see speed limit signs for myself as I drive...". Alas, I can't look at the second because it redirects to a google doc, which my company's proxy blocks.

■

Re: Battery life? **(Score:2)**

by gillbates (106458)

While it's a little inconvenience, connecting a car charger goes a long way. If you've got an unlimited data plan, why wouldn't you use this?

■

Re: **(Score:2)**

by thePowerOfGrayskull (905905)

While it's a little inconvenience, connecting a car charger goes a long way. If you've got an unlimited data plan, why wouldn't you use this?

Connecting to a car charger is also reputedly bad for battery longevity.

- ■

  - ○ **Re: ([Score:2](), Informative)**

    by [rodrigoandrade (713371)]()
    Newsflash: your phone ALREADY tracks you; it's an inherent part of cell phone technology. What matters is how this tracking data is used.
    - ■
    - ■   ■

      - ■ **Re: ([Score:2]())**

        by [Mister Whirly (964219)]()
        Do you store it in your tinfoil hat when not in use?
        - ■

- • **[Interesting, but only useful if widely adopted]() ([Score:5](), Interesting)**

  by [William Ager (1157031)]() on Friday November 07 2008, @06:49AM ([#25673931]())

  The project seems interesting, and there does appear to be at least some consideration for keeping the data secure.

  However, I would think that the system would require widespread adoption in a particular area before it would even start to be useful, and considering that it will only run on the small percentage of phones that have GPS to begin with, and there isn't much incentive in the beginning for users to install the software, I'm not sure that such an idea will be viable for at least a few more years.

  - ○

  - ○ **[Re:Interesting, but only useful if widely adopted]() ([Score:5](), Interesting)**

    by [cornjones (33009)]() on Friday November 07 2008, @07:41AM ([#25674185]()) [Homepage]()

    I would think that the system would require widespread adoption in a particular area before it would even start to be useful

    Not really. Initially, I would bet it is only extrapolating based on location and speed. I know somewhere like seattle (and I would be surprised if SF is much different) will have i high enough concentration of geeks w/ toys to bring back data on the major routes. If you have 1 data point on the I5 going at 15 MPH, you can guess that traffic sux. Given the volume of the people, a fairly low adoption rate will give data.

    More data points will always make the system better, of course.

One of the big advantages to any of these traffic knowledge programs is that they benefit both people tapped in to the program and those not. For example, super tech guy A checks this program and sees that Road N is slammed today. He, or hopefully his software, will plan a new optimum route based on the traffic data. This removes tech guy A from the problematic traffic pattern. Luddite guy B, doesn't know any of this but his traffic pattern is eased b/c the group of people like tech guy A have avoided exacerbating the problem. As a side benefit, you have utilized your road infrastructure more completely. (recent research about limiting paths being more efficient notwithstanding)

Parent

-

- **Re:** (**Score:2**)

  by thedonger (1317951)

    If you have 1 data point on the I5 going at 15 MPH, you can guess that traffic sux.

  No, you don't. A valid sample size is crucial to reduce or eliminate outliers. In you case, the one guy with the GPS phone is on his donut spare coasting in the breakdown lane and you end up 20 minutes late to work because you took the back roads.

  -

  - **Re:** (**Score:2**)

    by L4t3r4lu5 (1216702)
    No you don't.

    Being the only two people in the area who have the tech, you take the back roads **which nobody else used**, because they don't have the enabled tech to tell them to not use the interstate.

    You still get a clear journey.
    -

  - **Re:** (**Score:2**, Insightful)

    by Pervaricator General (1364535)
    Traffic is traditionally modeled as a fluid, with all points assumed to be moving within a very small tolerance of some speed. When do you see someone NOT going within 10 of the speed limit who isn't an outlier? They are either parked on the road or blazing through traffic.

While recent research has suggested that a gas-based model might give better predictive results, you shouldn't need that kind of fine granularity to be accurate in the near-term.

- ■

- ■ **Re:** (**Score:2**)

  by Registered Coward v2 (447531)

  I would think that the system would require widespread adoption in a particular area before it would even start to be useful

  Not really. Initially, I would bet it is only extrapolating based on location and speed. I know somewhere like seattle (and I would be surprised if SF is much different) will have i high enough concentration of geeks w/ toys to bring back data on the major routes. If you have 1 data point on the I5 going at 15 MPH, you can guess that traffic sux. Given the volume of the people, a fairly low adoption rate will give data.

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  It would be interesting to see what sort of equilibrium is reached - if enough people use it and move off main roads; side roads start to slow while main roads improve. This could result in people returning to the main roads; resulting in the opposite and a move to side roads.

  It could result in some steady state level of use or a blinking Life equilibrium between two patterns.

  The algorithm would be interesting - they could through out the outliers before averaging to eliminate the stopped by the side of th

    - ■

- ■ **Re:** (**Score:2**)

  by DerekLyons (302214)

  > I know somewhere like seattle (and I would be surprised if SF is much
  > different) will have i high enough concentration of geeks w/ toys to bring back

data on the major routes. If you have 1 data point on the I5 going at 15 MPH, you can guess that traffic sux.

Actually, there's many, many places along I-5 where you can get that singular data point - and be dead wrong. That is, the data point can actually be *adjacent* and traveling parallel to I-5[1] but the inaccuracy of GPS[2] can make it appear to be *on*

- ■

- ■ **Re:** (**Score:2**)

  by corsec67 (627446)

  Or some places where the interstate is raised, and there is a local road *UNDER* the interstate, with stop lights. If you only look at lat/long on the GPS, it would look like there are a bunch of cars stopped in the middle of the interstate. The altitude would have to be accurate to within about 15 feet to positively say which road you are on. (I think I-70 a bit east of I-25 in Denver is like this)

  Another issue, at least with my Garmin Venture CX GPS is signal reflections. I was on a mountain in CO at abou

    - ■

- ■   ■

- ■ **Re:** (**Score:2**)

  by 2short (466733)

    You don't care about downtowns. Downtown is the start point or destination; you take the street that goes to your office. For traffic data, all you care about is major arteries.
    I do data analysis that needs good (average, not real-time) speed data for all the roads. It's very frustrating - nobody has it because almost nobody else cares.
      ■

- **Yeah but Helicopter crashes are more entertaining** (**Score:5**, **Funny**)

  by cavehobbit (652751) on Friday November 07 2008, @06:51AM (#25673937) Homepage

  Come on. Don't they know the reason we all listen to the half-hour-out-of-date traffic reports from the helicopter reporters is the same as why we watch Nascar and Indy car races? The chances of a crash and the anticipation of mayhem are the whole idea. Not to mention the cheesy chopper sound track they add.

  This takes all that out of it. It guarantees a daily fender-bender on I-95 while drivers fiddle with the app. Whoop-de-doo.

Well, maybe if they keep the chopper sound effects.

- ○

  - ○ **Re:** (**Score:3**, Insightful)

    by thedonger (1317951)
    I think an even bigger issue with the immediately-out-of-date traffic report is that once the crash is cleared and the traffic at the front of the line starts moving they consider the problem resolved. They do not take into account the ripple effect sending echoing "shockwaves" of traffic stalls up and down the highway.

      - ▪

- **Know what happened with Dash?** (**Score:4**, Informative)

  by Lord Satri (609291) <alexandrelerouxNO@SPAMgmail.com> on Friday November 07 2008, @07:07AM (#25674003) Homepage Journal

  I of course wish them good luck. One of the last commercial attempts to do this, Dash Express [dash.net], recently revealed it did no go as well as originally planned [zdnet.com].

  - ○

  - ○ **Re:** (**Score:2**)

    by e2d2 (115622)

    Which brings up a great point. I really hope they have legal advice on this project because they are walking the thin line of IP here. I worked on a similar project around 1998-1999 for a large company and their IP was always precious to them. I've seen a few other commercial companies try also.

    So the moral of the story above - CYA.

      - ▪

- **TomTom did it!** (**Score:5**, Informative)

  by wfberg (24378) on Friday November 07 2008, @07:09AM (#25674009)

  TomTom takes anonymized location information from mobile phone handsets in The Netherlands, and make traffic reports they call HD traffic [tomtom.com].

  The handsets are not (necessarily) equipped with GPS chips, but their location is triangulated by the GSM network itself. The mobile network (Vodafone NL) supplies the information to TomTom, who then process it into traffic reports.

They claim to cover 10 times more road area than conventional traffic detection that uses inductive loops embedded in the roads. (The conventional system is already quite extensive in The Netherlands, which is a small and densely populated country). I seem to recall TomTom also have some sort of patent.

- ○

  - ○ **Re: ([Score:2](#))**

    by caluml (551744)
    This is actually why I started my Location Tracking [calum.org] system a few years ago. Convince enough people to submit their data (pay them for it, per mile?) and then sell the aggregated data to people who wanted it. Road builders, government, people who want to know where congestion is.
    - ▪

  - ○ **Re: ([Score:2](#))**

    by CompMD (522020)

    AGPS over cell phone networks is atrociously inaccurate and cannot be trusted for true position fixes.

    - ▪

  - ○ ▪

    - ▪ **Re:TomTom did it! ([Score:5](#), Informative)**

      by kitgerrits (1034262) * on Friday November 07 2008, @09:07AM (#25674859)

      Actually, you can see the current HD Traffic status on their website *for free.*
      The reason you need to pay for HD traffic on your tomtom is because it *includes a 24x7 GPRS connection.*
      Mobile Data packages in NL tend to cost around â10 a month and so does HD traffic, surprise!
      The added advantage of HD Traffic is that it uses a modem built into your Tomtom, so you are free to use your mobile phone for other things.
      (unlike earlier versions of Tomtom Traffic).

      Parent

      - ▪

- • **And what would happen if... ([Score:4](#), Funny)**

  by ngp (88217) on Friday November 07 2008, @07:09AM (#25674011)

  You and your 50 coworkers get to the office and forget to turn off that app? Massive non-existent traffic

jam?

- ○

  - ○ **Re: ([Score:3](), Funny)**

    by L4t3r4lu5 (1216702)
    Only in parking spaces 26-76, though.
      - ■

- **[Has been done in Bangalore in a different way]() ([Score:4](), Interesting)**

  by ashraya (632661) on Friday November 07 2008, @07:19AM (#25674053)
  In Bangalore, they tried to do this in a different way by looking at the number of cell phones that connect
  to various towers etc., without using GPS. Check out the links at http://btis.in/live.htm [btis.in] ashraya
    - ○

- **[Tom Tom HD]() ([Score:2](), Informative)**

  by zoefff (61970)

  It's already commercially available here in the Netherlands. Tomtom teamed up with vodaphone, which
  can locate their mobile phones location and speed (not necessarily GPS needed) . This is fed to tomtom,
  which displays it on your navigation system. More info here [tomtom.com]

    - ○

- **[Stupid...]() ([Score:2](), Interesting)**

  by g0dsp33d (849253)
  There's already a cell-phone based system. People with phones call local radio stations when there's a
  delay. Unfortunately it probably won't help much. If there were a good alternative, there probably
  wouldn't be traffic to begin with. I commute on 95 & PA turnpike, and if its closed, I'm pretty much
  screwed into a 3 times as long commute. Getting an instant update won't really do anything other than give
  me a few more minutes of misery through anticipation.
    - ○

- **[Few spolsports will kill it all]() ([Score:3](), Interesting)**

  by 140Mandak262Jamuna (970587) on Friday November 07 2008, @08:56AM (#25674753) Journal
  Ideas seems to be good on paper, but on reality it is going to go the way Citizen Band radio went. One
  dumb teen who thought he was a DJ would play his scratchy cassette player over the radio and knock
  everyone else within his broadcast radius. Something similar could happen to this method too.

  The data streams are anonymous and users voluntarily download and install a java program. Wow! What
  can go wrong?

A few spoilsports will hack the java program to give misleading reports, multiple reports. Initially I don't see any benefit to the hackers. But the script kiddies do not think rationally. They do it anyway.

Why can't the cell towers simply track the number of phones each tower is pinging? Then the net gain and net loss of number of phones, plotted over time, gives the direction of movement of the population of cell phones. That should be enough to give a good idea of the traffic. This would be a better way to find/predict traffic congestion than asking thousands of peoples to actively report their positions.

- ○

  - ○ **Re: (Score:2)**

    by Fnord666 (889225)

      One dumb teen who thought he was a DJ would play his scratchy cassette player over the radio and knock everyone else within his broadcast radius.

    That's what straight pins shoved through the antenna feed coax and clipped flush with the sheathing are for. Especially if you insert them at a reflection point based on the wavelength.

    - ▪

- • **Already done in US! (Score:2)**

  by CompMD (522020)

  Garmin and Navteq have had this out for a while...there is a radio receiver in some Garmin GPS units that receives traffic reports and will automatically create detour routes around traffic, accidents, or even construction.

  - ○

  - ○ **Re: (Score:2)**

    by esampson (223745)

    I believe that what's significant here is how the data is being generated.

    The current systems (Garmin and Navteq are just two examples) work, as you said, off traffic reports. This requires a certain infrastructure like roadway sensors or a way for a human agent to gather information about the road.

    In the system to be tested the data is automatically generated from the cell phones of drivers. This means no sensors need to be placed and no human agent needs to gather information.

    - ▪

- **Radar?** (**Score:2**)

by CopaceticOpus (965603)

To really make this handy, they need to tie the phones into people's radar detectors and report that data as well.

- ○
- ○

  - ○ **Re:** (**Score:2**)

    by what about (730877)

    It has nothing to do with Java....

    Any running application is going to draw power, if it is indeed running

    I have Fring, a convergence application [fring.com] it is a pure Symbian application but I end up not using it because i drains the battery a lot

    - ▪

  - ○ **Re:** (**Score:2**)

    by Molochi (555357)

    I drive with my phone plugged into a hands-free docking station or just a charger when in a rental. This app would encourage me to keep my phone topped off.

    On the other hand, battery drain would discourage its use on foot, bike, the bus or train. Too bad as it would be nice to time my arrival at a stop in sync with the approach of mass transit.

    - ▪
- ● ○
  ○ ▪

      - ▪ **Re:** (**Score:2**)

        by jollyreaper (513215)

        -1 raving lunatic

        a warrant from a judge will allow homicide investigators access to your cellphone provider's accumulated data, including tower connections. omg, the humanity!

        And Britain's anti-terror laws won't ever be used for purely economic reasons against another nation, say Iceland. And the Patriot Act will never be misapplied to things like

copyright violation cases, etc etc. Nope, nobody will ever misuse a tool for something other than its stated purpose because that would be wrong!

- ▪

- ●   ○

    - ○ **Re:** (**Score:2**)

        by Q-Hack! (37846) *

        Well, seeing as how most civilian GPS units are only accurate to about 100 feet. And most playground Merry-Go-Rounds are no more than 20 feet across... The system would just see you as stopped in one place.

        albeit, maybe a bit dizzier.

        - ▪

- ●

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I want to marry a girl just like the girl that married dear old dad. -- Freud

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