Week 5

**Researcher 1** 00:01

Yeah, go on.

**P5** 00:02

I was gonna say I took it with me out to Rising Sun. And so that involves like taking multiple buses, like leaving the house taking multiple buses getting to Rising Sun. I walked past the service area with the cafe and stuff. I don't know if you'd been there.

**P5** 00:24

And then I did a walk out in the woods. And then I went back to the cafe area. And then I actually did some volunteer work that afternoon, and then took a different bus home. And so Saturday for me was really fun, because I hoped that it would track that route, but also see when I was in like a dead zone, hopefully.

**Researcher 1** 00:45

Yeah, yeah, that's good. So have you. Can you see Saturday on the iPad?

**P5** 00:51

Yes. So I can see Saturday on it. And actually, that's kind of cool. If you see, and maybe I can all expand this and then maybe take a screenshot

**Researcher 1** 01:02

That'd be great. Yeah,

**P5** 01:03

Yeah. Well, because I need to send you my picture, like took pictures of like, where it normally sits at night. And that one day that I had it in the bathroom overnight, like where I put it. I know you want to have those. But if you look on here, you see this gap. And that's the time when I was walking in the middle of the woods.

**Researcher 1** 01:23

That's nice. Yeah, because there's almost always it's quite surprising that there's almost always a Wi Fi network visible, isn't there?

**P5** 01:30

Yeah, and you can see when I'm back at the main cafe area, because I was there until I had volunteer work at 12:30 to three. But you can see when I'm there you can see the same network where I'm sitting in the same place. So you know, you can see, I'm at home, and then I'm taking multiple buses and I'm walking through town, walking through the woods, like cafe, walking through the woods back at the cafe. And then I'm in the other building. And then that blank spot.

**P5** 02:05

Oh, that blank spot, did I, what day was that, that was Saturday afternoon. Um, that was walking through Heaton Park on my way home. So so Heaton Park has a blank spot too.

**P5** 02:20

So yeah, so as far as cool stories go

**Researcher 1** 02:23

Is the motion data to go with that, is that sort of intelligible.

**P5** 02:34

I think it has more to do with the shakiness. So yeah, it doesn't, it doesn't move that much. So this is like when I'm taking a walk. It's just very slight ripples. And then there's like a tighter ripple, maybe where I'm on a bus. But there's a really tight squiggly when I'm on another bus.

**P5** 02:56

I don't know that it says that much.

**Researcher 1** 02:58

It's interesting that a bus has a distinctive, you know, of all the things you're doing the bus is sort of moving in the most, which you still wouldn't necessarily think of, I suppose because if you imagine, I don't know, I imagine Anyway, the thing to be sort of fairly stationary on the bus, but I guess the bus itself is kind of vibrating quite a lot.

**P5** 03:21

Yeah. So maybe this is more sensitive to like small vibrations, rather than like gross, kind of like that. rocking movement of walking.

**Researcher 1** 03:35

hey, [Researcher 2].

**Researcher 2** 03:37

Yeah, I think that's right. I think if you look at the, the movement isn't really dependent on the, on the amplitude of it. It's it is the it's the presence of any signal at that frequency. So you had a characteristic thus sort of...

**Researcher 2** 04:00

I'm in this. I'm in the Lake District, and I'm on the like the least ... the bandwidth is pretty ropey. So there's evidence of life, but I think I'll probably keep it off. And also I've got my dinners to eat so you probably don't want to see

**Researcher 1** 04:20

so we just, I don't know whether we're expecting anyone else but I thought we'd just been sort of talking about [P5] took it out to the to park with her at the weekend. And so we did manage to find a blank spot, a Wi Fi free zone.

**Researcher 2** 04:37

Oh cool okay. Well done. Which part was that?

**Researcher 2** 04:44

I'll tell you.

**P5** 04:45

Yeah.

**P5** 04:47

So one of them was in the woods at Rising Sun. And then the other one that I did not expect at all was when I walked through Heaton Park on the way home.

**Researcher 2** 04:59

Oh right, right.

**P5** 05:00

Yeah, I wan't

**P5** 05:02

Yeah.

**Researcher 2** 05:09

Sorry. No, you weren't you were about to say something else.

**P5** 05:16

Well, I was gonna say I think it was. But now if I look at it in more detail, if we want to talk about stories here, so it looks like the gap was before the bus. But after my volunteer work, so maybe that gap actually was another part of Rising Sun. So it looks like maybe I went into service out of service on the way to the bus stop.

**Researcher 1** 05:44

How far is the bus from the bus stop from where you were?

**P5** 05:51

10 To 15 minute walk.

**Researcher 1** 05:53

Is there anything else around?

**P5** 05:56

Um, yeah, so it's from the cafe. If you go kind of like Southeast, there's a trail. So I guess maybe there is a little dead spot where the cafe and the buildings end. And before the subdivision begins?

**Researcher 2** 06:15

So did the the new view work out for you? Did you try that?

**P5** 06:20

No, I haven't tried that yet. I've had a mad day.

**Researcher 2** 06:23

Yeah.

**P5** 06:28

I can do that sometime this week, though, if I can hold on to this a little while longer.

**Researcher 1** 06:35

Yeah, I think so. So especially you started late, I think we've been going for a few weeks by the time you started. So we're really happy for you to keep hold of it. And what we're probably going to do is look through spend some time maybe maybe next week looking through the transcripts from from the different calls and seeing if there's anything we want to go back and revisit that we thought that you know the things that have come out and that you know, kind of passed us in the flow of the discussion that we would maybe like to revisit and talk with you about in a little bit more detail. But you're really happy, happy for you to keep hold of it. For as long as as long as you want to really. Be useful to get feedback for other things and places we might take them. But don't need all of that, for sure.

**Researcher 1** 07:23

Didn't have an awful a huge amount to talk about today, I suppose. Sort of hoping to have a few more people, obviously. But so there was that. I suppose you wanted to maybe get people to sort of think a little bit about if there was anything, anything over the past few weeks and as you've been using the probe that we haven't talked about yet, that's kind of really leapt out at us interesting or, or if there's, you know, kind of like one, one takeaway from this experience so far that you've learned, or that was unexpected, or there's change your perspective on something, you know, if there was one sort of key takeaway, if you can identify that, and what would that be?

**P5** 08:18

For me, it's very much I mean, I can't see the GPS column. So I think that would have been interesting if I had looked at that pattern.

**P5** 08:27

But I think just the wireless part, was really telling to me because that to me, tells like, when you pair it with timing, it tells a story about like, how I go places and where I go and what I do.

**P5** 08:47

And that was something that had never occurred to me that if you accumulate where like, my my phones trying to connect Wi Fi, or or, you know, whatever this device, if you like add these up, and if you actually log them, it's, it paints a picture of where I go, even if it's not like really specific about this, you know, X or Y location. But like I can see over several days, just like when I walk to uni, I see myself connecting to the same things. And you can kind of see where i i sit still for a while because I'm on the same connection repeatedly. So you can see, like, yeah, here's one for example. And this is what like the thing that kind of gets at me. So this is this Monday. And so you can tell when I Whoops, oh dear I touch something.

**P5** 09:40

You can kind of tell like when I'm at home it just looks consistent. And then you see all this variation. And actually there's a blank spot there. So that might have been mean walking through the woods.

**P5** 09:51

And then I'm in a consistent place. So for me the wireless connection and tells about my activity as much as movement does I think. Did not expect it.

**Researcher 2** 10:05

I don't know, I'm beginning to think about the... So that's this pattern you're seeing in your own data. Like, does that, do you... Does that give you any sort of... How does that make you feel you make you interested in that sort of academically? Or, like, yeah.

**P5** 10:54

I guess I have mixed feelings overall. So like, if I, if this was just my data, and just me accessing it, I think it's interesting for me from like, a perspective of like, habits and trends for me to reflect upon my own actions. And maybe, you know, like, I, I connected to Melih Cafe several times, I'm like, oh, yeah, I went to the coffee shop quite a bit that week, like, you know, like, so for reflective practice that was nice. From a safety practice, it scares me because you know, as I discussed last time, like, my data has been used against me. And I feel like this is something that can easily be sold or used for purposes other than why, you know, I feel comfortable with.

**P5** 11:43

So that does scare me a little bit.

**Researcher 2** 11:46

As in somebody would could get onto your device, that sort of storing this data, or?

**P5** 11:55

Yeah, I think, I mean, maybe this, I mean, cybersecurity is not my field of expertise. But I can imagine, it's not that hard. If somebody's in close proximity to me that they could, like find some way, you know, either now, or maybe this is a future concern, you know, connect to my phone in a way that they could get access to this data. Or, what's more likely is that I install an app and the app says, We want diagnostics, we want to collect records, whatever. And in that case, they get it and they profit off of selling it to somebody else.

**P5** 12:36

And you know, like on the Apple App Store, they say data that is linked to you data that is not linked to you. Like, there, you know, a lot of apps have permissions that allow data to be linked to you into your identity. So that's maybe that's more realistic fear.

**Researcher 1** 12:58

I though you just something interesting, as well about kind of reflecting on your own activities through the data and like the fact that you've been to the coffee shop a lot is is there any other anything else in your life I suppose that you that causes you to reflect in that same way?

**P5** 13:19

Yeah, right now I'm trying to like change some my habits. I'm, I'm, there's some habits that I'm, I have that I don't want anymore anymore. And so I'm working kind of hard. And I've got like a little habit tracker of like, have I been doing this today and stuff. And so I think this is similar in that. And if I was, you know, trying to maybe, like check in on myself or do something where I want to be, you know, was I at work for eight hours today, you know, or did I just like, bugger off early or something? Like, this would be my my log. That's also a truth keeper. I couldn't say oh, no, I think I left a bit earlier. It's like no, actually, like, I saw you walking home early that day like that kind of.

**P5** 14:11

So I think from that standpoint, from like, a health and like personal growth...

**Researcher 2** 14:16

How does your habit tracker. What's the what's the form of your habit? Habit? habit tracker, manual or electronic or...?

**P5** 14:26

Yeah, it's electronic. It's using Notion. It's using Notions databases and their checkboxes and stuff like that.

**Researcher 1** 14:37

Hi, [P1]. How you doing?

**Researcher 2** 14:40

Hello.

**Researcher 2** 14:43

We can't hear you.

**P1** 14:44

No. I'm muted. Yeah, thank you. Um, I'm well, yeah, I'm sorry I'm a bit late. I was just on another call, the the conference went a bit over time.

**Researcher 1** 15:02

No no it's quite alright. How have you How have you been getting on with the probe this week?

**P1** 15:11

One thing I did was to copy that JSON file across again.

**P1** 15:18

And I am just about actually now to copy the index thing. I just didn't have time to copy the index file. And I was going to see if I can get the result. But But yeah, I think for me, it has always just been easier to use the SD card. Because we've been playing with the data and I think I've mostly used the data to learn R and [my son]'s been using to learn R and R Shiny.

**P1** 15:57

So yeah, I said, I think I use the data differently to everybody else, I play around with it, just to see what I can what I can do with it. And now I can visualise it to me that's

**Researcher 2** 16:12

I think at the beginning you, you spoke a little bit about making DIY projects, like watering self watering plants, and that kind of thing. Do you kind of see that well this is a bit of a leading question I guess. Do you kind of see that in that same, Like, same way? Or?

**P1** 16:30

Yeah, I think so. Um, yeah, to me, the interest is in being able to capture this information. And to think, yeah, I don't know. I don't know. It's like, you know, why climb the mountain? Because there?

**P1** 16:57

That's a bit like, it's a bit, I think, a lot more than what it is to other people like that. It's just technology. And I've got to play with it. Because I can. And it's really interesting for me to be able to, then look at it and visualise it in different ways and see if I can see trends and things. But I think what I find is my mind keeps going with what if I can add this to it or add that to it you know. It's not just about what it gives me it's what else can I make it give me but the main reason is, well, what can I add to it to give it more context? Like I see right at the beginning, for instance, what about temperature? So I've been playing with my Raspberry Pi, and I've got a temperature probe attached and I'm running an HTTP server and I've been monitoring that.

**Researcher 2** 18:15

did you do that during the hot days? Or?

**P1** 18:19

When did I start? I don't think I

**Researcher 2** 18:21

I think wel all got very, very focused on the temperature in those days.

**P1** 18:27

I actually didn't have it then Yeah, I think it's only been for the last few days, the last four or five days that I've had it on. And that is because I've been asked. So in September, I don't know if I've mentioned I probably have. I'm going to South Africa [for a personal trip]. And while I'm there I'll be working too but also for this fellowship with this software Sustainability Institute that I have to do some of the stuff on that project. So while I'm there I'll be visiting University of Cape Town and University of Stellenbosch and so on, though, and then someone at Stellenbosch University asked me if I would run an Arduino slash IoT workshop for them. And so of course, immediately, I'm thinking, what would be the easiest way to get people going?

**P1** 19:27

And that was where the temperature probe came in the Pi and I've got ESP 32 Yeah, and I ordered an Arduino and honestly, which is easier and yeah, so that's, that's what this does to me. It just gives me more ideas of what I can do to play with and how can I play with it and what would

**Researcher 2** 19:46

And would you make any so you know, the data quite a lot now, you know, you've seen how frequently measures and that kind of stuff would you change that? Are there any ways that you would like would you gather more data or less data like would you gather all the Wi Fi points? Or just the one like we are? What that kind of thing might you do different?

**P1** 20:11

What do you mean the one because you actually getting quite a few Wi Fi points on here,

**Researcher 2** 20:16

I think only logs one pay per minute. I think it logs only the top one per minute. So I think that the list gets back on the list internally of the strengths, different strengths for them. But I think, yeah, I'm pretty sure only presents one. One, when you do a data dump, it's only got one Wi Fi network name per line.

**P1** 20:46

I'm not sure what you mean.

**Researcher 2** 20:47

Let's stick with the temperature like so I guess my question is, like, I made some decisions about how much data to gather and how frequently to do it. I'm kind of just curious, whether you would, it's occurred to you whether you would do something similar to that or like to make different to that.

**P1** 21:10

Um, so my data probe is is actually just it checks every five minutes. So it's actually less than yours. You are checking every minute. Yeah, so I've made that one check every five minutes.

**P1** 21:27

I think, yeah. Cuz temperature, I think it would be alright. I mean, sound I would probably want to increase, because like we discussed last week, you could actually miss quite a bit of sound in a minute. Because sounds could be... with temperatures not going to change that much in five minutes. Whereas sound, I think, so I would probably think about what granularity I want for what type of sensor?

**Researcher 2** 22:03

Yes, we sort of ended up with the same granularity for all of the sensors in this in this in this design.

**P1** 22:11

Yeah. So I think I think whatever I've learned from that is that I would, I would consider, what would I miss and either increase or decrease the frequency based on the sensor. And what it'll get, like light is probably also Okay, every five minutes. But again, in contrast to sound, except, of course, if you want to do light inside the house, where people might go and switch it on, go into a room and go out?

**Researcher 2** 22:41

Well, this is what I've been thinking about after our conversation with [P2] last week, I think it was, like, I want to put it in a cupboard or I want to make a essentially want to make it log an event. And it's like, oh, actually, what you need to be doing then is be looking for the for the change, and then just look the change. And, and so that would be an entirely different model to do it. I guess that? Well, [Researcher 1] told me if I'm if I'm going too far down a rabbit hole, but

**Researcher 1** 23:14

No, I think that's really interesting. Yeah, I was just thinking, Yeah, almost. Yeah, the different, you know, said the difference between one image and the next and just highlighting what the changes would be interested in it. And you know, the way that you kind of way that you compress the video so that you actually you're just storing the change from one second to the next. And suppose what's interesting is, yeah, spikes in sound, isn't it? Or something? Yeah.

**P1** 23:42

Just to store the difference, you'll have to increase the sensing.

**P1** 23:48

Yeah, you'll have to sense a lot more often. So that you can detect the change, but you won't be storing everything to the SD card, you will only be storing the differences. Yeah.

**Researcher 2** 24:04

Yeah. So why do we have to do this the sleeping quite the same way that it does at the moment. So there's the kind of kind of a trade off between, you know, if it was a device, we plugged into the wall, that's obviously to do basically what we wanted, but then trying to keep it on the battery...

**Researcher 1** 24:24

Going back a little bit [P1], you were talking about the fact that you just love digging into the data and seeing what was in there and seeing what you could find Did you ever do anything to sort of intentionally try and generate interesting data? Or were you just sort of taking it around doing what you will be doing anyway and seeing what that looks like?

**P1** 24:54

No, I think I yeah, I think I just took it. I didn't do anything out of the ordinary. I just did. What I did to see what the data would look like if I just do what I do?

**P1** 25:09

Yeah, I'm trying to think if there is anything that would make me do something specific.

**P1** 25:17

But I can't think of anything, I think I much prefer the idea of just taking it along. And it will tell me the story of what's going on in my environment when I do when I do.

**P1** 25:32

For the moment anyway, because I think it also depends on time, and how much effort and thinking I can put into it. Because if you probably leave me with it, leave me alone with it long enough, I'll come up with things to do with it.

**Researcher 1** 25:53

Yeah, and we're happy to do that as I say, this is the last of these calls. But if you're interested in keeping hold of it, I think we're very happy for you to do that. And be good to catch up in a couple of weeks. Because we're sort of, well, we're writing for a paper deadline in mid September. So it really be interesting to sort of catch up with you, you know, by the end of the month to see if you know if anything's changed, or anything new has cropped up since we finished kind of with these call.

**P1** 26:27

Yeah, yeah. Yeah, sure, that will be great. We can also then see, by that time, [my son]'s has been working on on the shiny app.

**P1** 26:38

Trying to visualise things a little bit differently to be able to compare. I just played around with like, not a shiny app just with normal R just to be able to put the days over one another to see that

**Researcher 2** 26:53

Did the CSV thing help you or was that? Did you continue to use what you've done before?

**P1** 27:01

I just continued, you know, I forgot about the CSV thing.

**Researcher 2** 27:05

That's okay.

**P1** 27:09

What was the same thing again, I

**Researcher 2** 27:12

It just gave you, you could convert the Data Probes file into a sort of tabulated version

**P1** 27:26

Weren't your going to send me something, or did you send it to me?

**Researcher 2** 27:29

I thought I had.

**Researcher 1** 27:32

Yeah, I saw the email there was there was a thing.

**Researcher 2** 27:35

I could send it to you again, it's not. It's it would just be interesting to hear if you had used it, just you know, because then we can talk about, it gives us another angle to talk about potentially.

**P1** 27:51

I think I didn't examine it. And I saw it and then forgot about it again.

**Researcher 2** 27:56

[P3] use that so.

**P1** 28:04

Yeah, I'm an idiot. I should have looked at it and passed it

**Researcher 2** 28:09

Oh no it's really not a problem.

**P1** 28:12

I think [my son] would have been interested in seeing it would have made his life a little easier. And I I just got,

**Researcher 2** 28:25

I know that feeling

**P1** 28:26

it past me. Yeah. I'll do that then. I'll let you know next time.

**Researcher 2** 28:33

Sure. Thank you.

**P1** 28:34

Yeah. So I've got the I've got the email. You don't have to send it again. Okay. Forwarded it to [my son]. Yeah.

**Researcher 1** 28:41

Hi [P3].

**P3** 28:44

Sorry, sorry, I got delayed. I just did not realise that the meeting would be at seven o'clock. I thought it would be 7:30 because a lot of things are going in my sights are just confused, confused.

**Researcher 1** 28:58

Alright, it's good to get to see you. Last question, then just [P1] before and maybe it would be great to catch up with you, then [P3]. I don't know if you heard the last question I asked [P5], which was, you know, if if there's sort of one takeaway from, from, you know, your experimentation with the probe and your experience of using it and, you know, one thing that's left out you that you thought was especially interesting. You know, it's the one thing that you've learned or that you think differently about having used the probe or, you know, if you had to just point out like one one thing that you've gotten out of doing this, what would that be?

**P1** 29:37

I think I just I kind of like the probe in again, because I'm looking at it differently. I'm looking at what can I do with this? I like the probe because it captures it all for me in on one in one place, which is what I've been trying to do with my sensors, but never quite managed, because they've been all over the place and they work or they don't. And this one has been working much more consistently and reliably than than what I've done before. So it's been nice to be able to every now and then think of it, take the card out and get the latest data and then look at it again. So pretty much I think, I can just say that I've enjoyed being able to play with it, because it's always that gives me data and an easy, accessible format that I can play with.

**Researcher 1** 30:35

Thank you.

**Researcher 2** 30:37

Thank you.

**Researcher 1** 30:38

[P3], how have you been getting on?

**P3** 30:39

Ah, very good. So yeah, this time, I have some data with me and also have some analysis with me not different, these are these are quite similar as the last one. But this time, I can see some routines and patterns in my data. So this is something which I really like about this experiment. And I mean, in terms of that, it gave me some sort of awareness that was our data can be seen and what sort of pattern from data can be analysed. So if you if you if I so I would like to share my screen if you allow me.

**Researcher 1** 31:22

Yeah, one sec. Turn that on. Yep.

**P3** 31:41

Can you see my screen.

**Researcher 1** 31:43

Yeah, that's good.

**P3** 31:45

So basically, this is out of almost six days pattern of my data. So I'm just sharing because maybe a few of the [inaudible] did not have access to the data. So they can see that what sort of information can be and what sort of analysis can be done on that information. So, you can see, there is two things like light and sound. So it was something I put this probe in my kitchen. So this left hand left hand side, like this light side light sensor is easily I mean, providing me my routine. I mean, what I used to do in the kitchen and how I mean, so yes, yeah, it is providing me information, I can see those dips and highs. So basically, I can relate those highs to my routine that when I used to cook something, and when I used to just eat something not going to cook and when I just go to to get some coffee or sort of tea. So these are all I mean, these are these highs are basically are the most relevant thing for me because if whenever I go to the kitchen, then definitely I use I need to turn my light on.

**Researcher 2** 33:13

Does have an external window?

**P3** 33:16

External window is there, but it's not you know, most of the time we keep it very low. So yeah, so external window, maybe have some some definitely would have some impact in the daytime, but still, it's not that much whenever light internal light is turned on or off then definitely that has a major major you know, input into the in this data. So, in terms of this, you know, high and low I can correlate when I when I go to to the kitchen, and in terms of experience, I can correlate there to what I would have been doing in the kitchen. So because I have done this thing, so I can easily understand that at what time I was doing what even though it's quite cool, you know, like three or four days before data. So in terms of sound, again sound doesn't look very promising in my case because I did not get chance to visit a lot of places like public parks or or you know stations or or pubs or something. So if if I would have been there definitely it would have make some proper sense but in my case because I mostly left it at home or or I guess took it with me in my office so there is only two places even though I mean I when I'm you know moving from home to university, there's also a short period but still I don't think there is any pattern I can see at the moment, maybe someone else can see could analyse it

**Researcher 2** 35:06

Could you speculate? Do you think an algorithm could, or someone or an algorithm could tell the difference between the sounds of the of the kind of the categories you've just said, like home park, or like a stadium or, or cafe or something?

**P3** 35:25

Like these six days or the six days when Probe is used to be at my home. So there isn't, I did not took it I mean, take it outside, so still, I can see that a lot of, you know, sparks in my data, but I

**P3** 35:42

Do you think it's reasonable that that could happen?

**P3** 35:49

I mean, the big, big thing, which I've seen, I don't know, because you know, it, it takes only one reading every six minutes, the probe. So, most probably most probably this thing I can see this you know high spot it looks like because I am leaving very near by the Metro track. So, there is train in every fifteen minutes, which which you know, pass by my home. So, I feel that these these lines, I can see that these are equal equal, you know, you can see intensity of these lines. So, these are big, I mean, longer lines, I feel that these present the sound of the Metro passing by my house every 15 minutes, so at times sensor is able to capture it at time sensor was not capturing when train passed by. So it looks like that it is it is something that

**Researcher 2** 36:58

You pointed out with in you kitchen light example, Could you could you just quickly show us how you where you see, you have the two examples of either making preparing a meal, or more of a class snack.

**P3** 37:15

Yeah, like, I can read, I can see this is this is the time I'm cooking. On day one. This is the time I'm cooking on day two. This is a time I'm looking at day three, something and no cooking this day. And these are the two, two spots where I am cooking something. Right. So these are basically the cooking scenario. And these are the scenario where I'm just taking some sort of you can say, meal, maybe dinner, it looks like it's a dinner, it's a dinner time is a dinner time. Here it is dinner plus cooking plus dinners. So yeah, this this sort of extended or we thought this I'm aligned I can I can see that. This is what what is happening there. Yeah, sure. So the this, definitely, it makes a story. I mean, I can tell that oh, I'm toying with my PhD here. In terms of also because it's all about because because of the because of the study, because otherwise I would have in the same time, but I'm doing sort of work on my on my laptop. So it's not same time I am doing some important thing definitely I will delay my cooking or I will delay my meal. So due to this thing is sort of irregular patterns. So this this, this is how I mean a PhD or life of a PhD student looks like so this is sort of one thing which I did on my data, it's like last week data. So one more thing which I did like this is movement frequency. So earlier, I did not have any idea that what I can get from movement frequency. But today I realised that basically the movement frequency tells me when I leave my home for the university, and when I do something or when I leave university for home, or somewhere else, I mean, it's basically tell the time when I have my bag with me, laptop bag with me, because probe is always in my bag. So this tells me that I do something important I move from one place to another place and I took my bag laptop bag with me to another place so like day one. I can see this in my morning time when I went to the university. So this is the time when I left university for home due to some some reasons. So second day again, this is the same spot, when I moved to university, it took a little a little extra time to simulate extended time to the university, maybe I spend some time on the way with someone. So again, on the on that on that day, this is a time when I came back to from university. So it's again extended time, I can, I can imagine that in this time. I left my office and went to the University gym, I spent one hour there and then they came back from the gym but actually came back to the home. So yes, this is I can see there. And so this is something when I looked like I was working with my laptop, I was working on my laptop and most of the time probe is beside my laptop. So I was making it I was moving it probably because I had to I was in such sort of different things at the time. So I was moving it from one place to another other day on thw table so this this spot is like that. So this is again, I'm going to university on the spot, I'm coming back from the University on this spot. This is the Friday time Yes, I went late to the university here, then no, no, this is basically I prepared my bag and I put put that probe in my bag. So this is sort of movement. Then I at this time I went to the University, this is the university time, this is a special time, which is our prayer prayer time I used to move I move to some mosque or some prayer place where I used to go so this is the time where I move and after there they just came back to home and this is some sort of movement at my desk and the whole Sunday probe just remade on my table I did not work any

**P3** 42:04

so yeah, this is something which I you know, analysed and I thought it it is useful to share with other colleagues so that they can they can see that what sort of data is coming out of probe and what someone else can see. So I also showed my you know, previous slide to my spouse. So she was I mean I was very impressed that straightaway she just she was able to understand the slide [inaudible] and he she was she just told me that okay, what you were doing in that time and what you were doing in that time so yes, even though she don't know about any don't anything don't know anything about this study, but she was able to understand what is happening there and how data is collected and what it is telling so just people can understand data if it is presented in some understandable format. So this is this is a demo on my slide.

**Researcher 1** 43:08

Thank you for sharing that. Was there anything in there that was especially surprising to you?

**P3** 43:16

Ah yes, I think this one this moment you can see something which I was not I didn't ever think that when I leave my home and when I go to university and when he returned back from university so when I just did this thing it really you know, make me surprised that at times I they go very late to the university, which I didn't realise I feel that I face all the time. So this is something which you know, helped me to understand that how much time I spend in university and how my when when I used to come in when I used to this is something very. Yeah, it's it really surprised me that, how I used to go to university and how I'm utilising my time in the university

**Researcher 1** 44:05

I really liked as well the the Metro you like that your your guess that that those spikes might be the Metro lines and it was as if if you had more continuous data would you be able to kind of reassemble the timetable for the Metro line

**P3** 44:22

I have some question on Metro line because this is so this card this is called frequency I don't know you know better about the sensor. But I feel this sensor movement or sensor frequency is the frequency when basically sensor is moved. Have some denotes two dimensional or three dimensional sort of movement? When it become static even I'm going on Metro I feel it maybe it doesn't take into account the movement of Metro, because at that time it is static.

**Researcher 2** 45:05

If it's very high frequency it won't. If it's relatively low, then it will.

**P3** 45:20

I have seen I have seen that when I took my probe from this from my kitchen to this to my study room. So my frequency was like 15 or 16 point something. So, if it is 25, I just moved it mean, Metro is moving like, like 60, 40 miles or maybe 35 miles per hour.

**Researcher 2** 45:45

It's more the vibration. It's more the

**P3** 45:48

Yeah so that's, that's what I am yeah I think that

**Researcher 2** 45:52

You should think of if you can, its a bit of a weird way of looking at it. But I've been thinking of the movement sensor almost like a microphone now. Like that you are ... yeah, so it's almost like a microphone.

**P3** 46:09

So you can see.

**Researcher 1** 46:13

I was I was thinking when I said Metros, I was thinking about the last slide and those spikes in the noise, which I thought was interesting. Also either intentionally or unintentionally, you made those graphs that the green and yellow colours of the

**P3** 46:28

Yeah I just, I just made those, you know, yes to, you know, differentiate the days, I mean, it looks a little bit distinction when you have sort of different colours. For me, I don't know what that is.

**Researcher 1** 46:46

Alright, thank you very much. Um, we're, we're sort of at time we're kind of over time a little bit already. I thought, it's been really interesting today, it was really nice to catch up with you. I don't want to keep you too long. Unless there's anything sort of, don't know, [Researcher 2], whether you had any last questions or anything, or if anybody had anything they wanted to bring up or sort of mentioned before we brought the call to a close. We will do, we would love to catch up with each of you, as I've already said, and do like a bit of an exit interview. And we're going to go through the calls and sort of pick out if there's anything interesting that we've missed that we kind of want to talk to you about. But yeah, if there was anything else today before we, before we hang up and speak now or hold your peace?

**Researcher 2** 47:35

No, not me. Not from my point of view. I'm just very, very grateful. And yeah, really, like, kind of now looking forward to this next phase right of, of sitting down having good, a good look at what we've got. I think it's there's this there's a lot there. Yeah. And then, as [Researcher 1] says, if you're willing to talk to us a little bit, once more after that, individually, that will be totally brilliant. Yeah.

**Researcher 1** 48:09

Yeah. And just to echo that, yeah, hugely appreciative always when people give up their time to take part in research. And as you the researchers amongst, you know, yourselves, like, it's not easy to recruit people and get people to engage as well as you have. So thank you so much for that, especially in the evenings.

**Researcher 2** 48:29

Yes, absolutely.

**Researcher 1** 48:32

Okay, fantastic. Well, I won't keep you any longer then, enjoy the rest of your evenings. And we'll be in touch about doing some interviews and keep hold of the probes if you want to, for the time being. Keep, keep exploring, keep experimenting, try different things and see what you get out of it. But likewise, if you're done, we can sort of arrange to come and pick that up off you as well.

**P1** 49:01

It's been a lot of fun. Thank you.

**P5** 49:03

Yeah. Fascinating.