

FINISHED COPY

APrIGF 2017 “ENSURING AN INCLUSIVE AND SUSTAINABLE
DEVELOPMENT IN ASIA PACIFIC: A REGIONAL AGENDA FOR INTERNET
GOVERNANCE”
BANGKOK, THAILAND
29 JULY 2017
WS 80
ALGORITHMIC TRANSPARENCY:
UNDERSTANDING WHY WE ARE PROFILED IN A CERTAIN MANNER
9:00 A.M.

Provided by:
Caption First, Inc.
P.O. Box 3066
Monument, CO 80132
1-877-825-5234
+001-719-481-9835
Www.captionfirst.com

This text is being provided in a rough draft format. Communication Access Realtime Translation (CART) is provided in order to facilitate communication accessibility and may not be a totally verbatim record of the proceedings.

>> MR. PRASANTH SUGATHAN: Good morning, everyone. As usual for a 9 a.m. panel, I think people are just walking in. But let's get started.

So, we live in an age where a lot of things around us, about us, what we do are decided by algorithms. So what are algorithms? I hope everybody has a clue as to what algorithms are. Again, have a raise of hands as to whether you know what algorithms are. That's a fairly good number so everybody knows so I don't have to explain it. So it could be anything from let's say similar algorithm to the names of people sitting in this room in any order to the Google search to Facebook's news street to deciding when we buy travel as to whether a person can fly or not.

So the various ways algorithms affect our lives on a day-to-day basis are common. And it's increasingly complex day by day.

Now, there is often thought that letting computers decide. There is an objectivity to it and there is no subjective element. Okay. If it's a human deciding it, there could be some kind of bias; but if a computer decides this, that's not so. But is that right? Could there be bias? As well as additions by computers are constant?

There is most often used phrase where you say in computer, you say garbage in and garbage out. That exactly is the case. All this on algorithms, the data you feed the algorithms, so there could be a lot of bias and a lot of even discrimination because of the algorithms the way they are structured. Maybe because of the persons who

wrote the algorithms, how they felt about things. And also because of their, I mean with all the artificial intelligence, Big Data, all the Shumit learning algorithms. So it also depends on the kind of data that has been fed in.

So we have a great panel to discuss all these issues. Starting from my left, we have Vaishali Verma with Jyoti Panday. We have Rajat Kumar. Art is again academician. So we have mix of government, academician, one is stuck in traffic. And Blockchains and all these technologies. So let's start with Vaishali. If you could give a brief issue of what we are discussing. What are the issues with algorithms? And what are the transparent issues with respect to algorithms?

>> MS. VAISHALI VERMA: Hello, good morning, everyone. So just to keep it short, as our moderator pointed out that we'll be having an interactive session. So I think I'll just in short describe the issues that we will be touching upon in this, our discussion.

So for this, we have four mini issues with algorithms. And the first issue we have is whether the algorithmic transparency, it can increase privacy.

Now, the question rises: How is algorithms, how are algorithms and algorithmic transparency related to privacy of people? If you notice, whenever you search Google, based on your history, it shows you targeted advertisements. So how does it do it? That is only because of the algorithms that are embedded behind them. So whenever you visit a page, it might contain cookies or the cookies have all sorts of algorithms which then take use of the data that you have inputted or the websites that you have visited. They track them. They make use of those data. They process them. And based on those processing, they show the topics of your interest or maybe advertisements of your interest.

So basically these cookies are the algorithms that are behind those cookies, they go into the details of the searches that you made, the websites that you visit, the data that you have entered. So they are keeping track of whatever you are visiting.

So in a way, they have been collecting all the data that are available this. Another example might be Facebook, which again keeps track of all the activity that you do on the platform and then shows targeted advertisements again or maybe the topics of your interest. And, hence, you can see a pattern that they know your choice. They know what ads you might like, the topics you might be interested in discussing.

But also you do not have an idea as to what the data is that they are collecting. So when you talk of Facebook, what is the data that they're sharing, that they're collecting to process that information, to show you your search result, targeted advertisements. So what is it? Is it your maybe just profile of pages that you visit or the friends that you have or the status of the friends that is socioeconomic status based on the places? What exactly is the data behind it that they're processing and what exactly is the data that they're collecting. That all encompasses the privacy of an individual. So when you look at this, when they show you the targeted advertisements, they are taking information from you. You do not have control over -- they do provide you control, but you have to be very aware as to what permissions are you giving them? So that also encompasses that privacy aspect. So you have to be very aware as to what information are you giving those sites? And what information are they taking? And in return how are they processing it in? In what method? What algorithms are they using it?

So all things are included in the algorithmic transparency, that the algorithm is transferring, you would know what data are they collecting and how are they processing it?

Now, the second concept that arising out of privacy is whether these companies, the advertisement companies are they bound to disclose algorithms? Or if they disclose this algorithm, will the interest be jeopardized? Because obviously if you see that they have these companies they have commercial and financial linked because they collect all those datas and then they process it to sort of give you some targeted advertisement. So they have their commercial financial interest related to it. So how can you compel them to maybe make those algorithms available to you publicly disclosed? So from the point of end-users if you see, from that point of public interest, that three-step is most important -- three most important public interest figures who can actually benefit from the disclosure of these algorithms. First might be the end-users. Because if they know what information the algorithms are collecting from them, they will have more control over the information that they want to disclose. Then we can have the researcher community. Because if they know that what is information that the particular algorithm is being collected, then maybe they can contribute to that algorithm to enable it to use less data to perform the same function that it had been doing but with lesser information. And of course perform it efficiently. So the second might be researchers. And the third might be government. Because in these cases, then the government will understand wherein lies the liability of if in case these data are misused or maybe some accident arises, for example, in the case of self-driving cars, so if an accident takes place, so where does the liability arise? Who can we point out? Will that be particular person? Or the algorithm maker or where? It will in fact help the government, as well.

Now, talking about the disclosure of the algorithms that bring us to the next question, whether if the algorithms have to be disclosed, whether they have to be disclosed in those original, what can say, in that original code or they may be just disclosed in the descriptive arm which is telling you what sort of information are they collecting and how exactly are they processing it without going into the details about how the Code is made.

So if they're not disclosing because it is usually considered trade secret, then they can opt for the second sort of disclosing the actual code, they might go for basically explaining what sort of information are they using and how are they processing that. It might be beneficial. The user would know how is their data being collected and processed?

Now, that also bring us to the other part, the part of library. Example is the self-driving cars of Google are coming up with. What if the algorithm gets a bug and it malfunctions and suppose an accident happens. So the problem therein with liability is: Who gets liable for the loss caused due to the accident? Will that be the person who made that algorithm? Or will that be the person who manufactured the car and who employed that algorithm? Or would that be the person who actually bought the car?

So these are the questions that arise when we talk about algorithmic transparency. If we have algorithmic transparency in the algorithm, then the library part would be cleared, it would be easier for the government and other people to actually decide if these circumstances arise, then what, who the person is who can be held liable for all these things. I think these are the most important points. And I'm sure will discuss into it and delve into it deeper and give us some clarity.

>> MR. PRASANTH SUGATHAN: Thank you, Vaishali, for that introduction. You laid out the major issues that we need to discuss in this panel and that's very useful.

Now, authoritative. Do we find Big Data is everywhere? So our data is collected. Everybody wants our data. Whether it's private corporations or the government. What do we do about the kind of data that's collected, the algorithms that use these kind of data?

>> MR. RAJAT KUMAR: One second, can you go to? Okay, great. Hi, good morning, everyone, my name is Rajat, I'm from the Friedrich Naumann Foundation. My work will be based on of this amazing work by a done of Yugoslavia research work that came out on the scene last year called share labs. I cannot say how absolutely cool this work is. So please go to their website. FYI, we don't work with them, we don't partner with them, but their work is amazing. And also they have the best tag line ever. Right? Isn't that just brilliant. Where Indy data pop meets media theory pop to investigate digital rights blues. I think that is brilliant. Now, this is of course a part of their work called the Facebook algorithmic factory where they've looked at the way data collection -- all right. They look at the way that sort of data collection happens. Now, they've created this massive image sort of tracing the root of all the data that's collected from your actions and behaviors and social statuses and friends and so on and so forth off Facebook. I can't present that because to be very honest is the just too big. It's about 14,000 pixels tall and I can't Brent that here.

But just a snapshot.

So when we talk about data collection, one of the things they look at is actions and behavior. Now, maybe -- can we switch the lights off just a tiny bit? Because unfortunately -- yeah. I'm so sorry it's a little blurry but I can read out a couple things. Every action you take, like if you like something or you share something or you view a post or you access a group, that's collected. So this is all your actions and behavior. This is a macrolevel image of what's collected.

Now let's go into a little bit of detail. When you post a link, when you edit a photo, when you comment, when you say something, when you tag a photo, when you choose a location, when you share it, when you report a problem, when you block somebody, when you add a file, when you create a new page, all of that is collected as part of your action and behavior, right? There's a bit more.

What have you opened? What other posts caused impressions? And very famously we have the case of the U.S. election from last year where it is precisely because of this analysis of what do people click? Content providers and particularly fake news guys were able to serve information to them, right?

All that leads to two sort of storage mechanisms, one is the action logger and one is the content logger.

Now, I'm going to skip ahead to another one. Your profile information, right? What is your status history? So all the statuses that you've posted since the dawn of time are recorded. Feeling happy. Feeling sad. Feeling oh my good so excited to be at APriGF, whatever. Any websites that you have, any URLs that are linked.

Now this is where it gets a little scary. Your name. Your mobile phone number. Your address, your college, your high school. Hometown. Current city. Your health and wellness information. Have you posted about any weight loss recently? I haven't. If I stand up, you'll know immediately why, right? If you've lost somebody recently. If you're in a new relationship. Any life events. All of that is cataloged.

And that goes into a profile store. Right? Now, I've skipped ahead. These are the four key outputs, the four key sort of well, inputs as well as outputs, really. Action and behavior, social graph. Your profile store and your device information.

Now, just again a very small snapshot. This is from this massive image. I've just picked up a tiny bit is talking about targeting based on your demographics.

Now, again, your education, your ethnic affinity, African-American, Asian, Hispanic, this is done predominantly from U.S. base lands but it still holds true no matter where you are. Which generation are you from? Are you millennial? What's the word they use for us? Privileged, overprivileged, hypersensitive millennials. We're not, right? Are you generation X? Or are you something in between, right?

Where do you live? Are you an ex pat? Where's your hometown? Where do you currently live? What are the life events you had? Who are your parents? For the U.S., of course, what is your political affiliation and your relationships. It's good. Now, this is sort of at the really macrolevel. So I'm just going to go back for a tiny bit. I want to point out a few things.

Now, I come from a predominantly social science led background where I have worked on exclusion as a predominant -- and digital exclusion as a large part of my work.

I just want to put out a question to everybody here and of course to everybody on the panel. I'm sure we'll get a great debate on, is when we talk about transparency surrounding algorithms, what is the responsibility that these institutions have to people who aren't necessarily that literate? I come from India. We have a tremendous population that is connected by mobile phones. 70, 75 percent as of last count. But the world development board back in 2016 said, what was it? 1.063 billion people are not connected to the Internet in India. That's an incredible number because that's actually higher than the next three countries' offline population combined. So the question is we can talk about algorithmic transparency. We can print out massive A0 sheets like how these guys would have with this flowchart of exactly what happens to your data. But how do we communicate that? And this is something that practitioners. I think academics. Civil society people all across the world should try and maybe look into is how do we exactly try to communicate information surrounding algorithmic transparency to people who are not just in the know, who are not slightly technically more capable or aligned. But also to people who have no idea what it's all about. Yeah? Thanks. I mean just a couple of provocative questions to sort of get my own agenda up and running. But thanks so much. And, sorry. Last thing. Thanks.

>> MR. PRASANTH SUGATHAN: Thanks, Rajat. So we have a social science background and now let's move to a little more detailed backgrounds.

So I think we have Art here who has done a tremendous amount of work in this area, especially on the tech aspects of it and educational aspects of it. So to you, Art.

>> MR. ARTHIT SURIYAWONGKUL: Thanks a lot. I'm not that techie anymore, to be fair. I used to work in the area called computational linguistics, but that's like a while ago. We have to call it data intensive linguistics where you have a lot of, like, user data. But mostly they are like texts or voices. And you build a model of that. And the application is like speech recognition, speech synthesis. Automatic summarization, things like that. But that's quite a while ago. I don't consider myself that tech anymore.

Anyway, now I'm working for an organisation called the Foundation for Internet and Civic Culture and we focus on this data protection, Freedom of Expression.

So all the things that I'm going to -- does it work? The clicker? How to

actually use this? See, I'm not that techie.

[Laughter]

That's why. I would just go there. Better. So this is the way we solve the problem. Okay. Sure. How this thing works? Yes, please.

Because this, the thing that I am not really understand yet but have an interest so just do the survey of why I have interest in this transparency and -- in general, like the decision made by the machine based on data or whatever techniques.

The main thing I have interest is the question of discrimination. And there's a term, say, of assembling data, there's risk remediation. Or data-driven discrimination. And this is -- this discrimination can be prevail in society. It can be something like whether you will get a scholarship or not. Whether you get a loan or housing or jobs or not, right? Previous lip companies or enterprises, organisation, we can say that it's not that different, right? So when you're talking like -- when we have this panel, we talk it like this is kind of new thing that the decision is made on data, computer make the decision on machine learning, artificial intelligence models, whatever, right. Sorry.

But this has been happen in the past and currently as well. But probably is not that, it's all there who read the data. But it's all human. Discrimination based on the data. It's already here by the human. And by definition, to make a decision, it's to discriminate to some extent, right?

But the problem that I think that this panel discuss in more detail, it's about the scale of it, right? Because in the past, yes, the decision is made on the data, but it's a smaller scale. When there's a machine make a decision, it can go to a much larger scale. And also in the, into the details, into that how to say? It's not that understandable by human anymore. So previously, yes, the discrimination made based on the data, but there are certain criteria, there are certain set of rules that written by human. So it's understandable by human when you do auditing. But when the discrimination, it's made by machine in some mathematical models, computational model. It's more difficult for human to understand it, to audit it, whether there's discrimination or not. That's the cut. We're not saying like discrimination based on the data. It maybe happened before. It always happened, right? But what we talk here is the scale and the difficult to do the audit. And it's not only about the machine alone or human alone. Sometimes this discrimination has been done hand-in-hand by say like collaboration between machine and human.

I take this one from the College of Journalism at the University of Michigan. So there's research like premier, kind of like small-scale research that just like make a quick search on the Internet about the earning reports of different companies in stock markets, right? Because this report, the ethics, people trust those companies and the ethics, the share price of the company. Anyway, that's too many companies in the market, right? And it's expensive to actually generate these reports, to write this report by human. So there's a company using a concept of robot journalism or automatic journalism to generate these earning reports based on the data, the structured data that's already available. So we have a software that read the data from this company reports electronically, some articles, some narrative of the database, basically.

A quick search on Google they found that there are thousands of earning reports that contain errors. And these make the human who read it have a wrong image of the company performance. Then it affects the share or the value of the shares of the company. So this is one example how this can be addressed and who's

going to be responsible for this.

There is also a problem of like related to the discrimination, but this can be go more in the systematic way. Even in the policy level. So there's a lot of times that the public policy, well, I mean, in the end, we can agree like a good policy should be based on evidence. It should be evidence-based when you make policy that's going to affect public in general.

But then again there's a problem of over and under representation. This problem, again, happens well before this discussion of algorithms.

But one other thing that we noticed that there are more and more chances that the richer people will have ability to generate more data points and feed it into the public policy discussion or decision. Take like extreme example. Hypothetical about making a policy about the public healthcare. Say or right now, a lot of people have device like wristband or how you call it like smart watch that can monitor your like blood pressure, whatever, heart rate, right? We take these data to decide about the public health policy for whatever reason. The question is like who can actually own these devices? So if it's only the richest people who can own these smart devices and then these data has been used to make a public policy for the public healthcare, it means that that's a tendency that the public health policy will be skilled like towards the richer people. This is kind of extreme example. But it's possible like to happen.

I'm going to wrap that. So I think that I'll just throw this kind of question. I actually don't have an answer. It's not that -- like people, techies, like I'll show a photo, it is not programmers or software developers are not really aware of this. Association of computing machinery, ACM, actually aware of this. Earlier this year in January published 7 principles about the automatic transparency and accountability. You can search to are this and read in details.

I'm going to end here that like we found that many times yes, we know there's a problem. And many times we try to a little bit fix it or some people talk about open source the source code, right? But I like to stress like the transparency in the source code is not the same as transparency in algorithm. Even you have the source code, it's still difficult to understand how it works. And the source code itself, it's not explained how the system work because there's a data model, as well, that we don't understand. So it's not source code alone. There's a training model, as well.

So even it's not -- I say that it's not only the source code, it's also the data model as well. Even we can specify or where is the problem set of data that lead to discrimination. Even we know which set of data, it's still a question how can we remove that set of data or influences from the model that has been already trained? Because now the size of the model is very huge. And the way the trend is kind of accumulating a little bit layer by layer, one by one. A little bit. And then so like if you know the data, we added like two years ago actually how can we remove that without affecting whole set of model? Yeah. Because like to retraining, we train everything from scratch, takes a lot of time and it's not practical. And this is one of the reasons why companies have hesitated to actually remove or have the item to remove because it takes time and effort to actually retain everything from discretion. I'll end it here. Thanks.

>> MR. PRASANTH SUGATHAN: Thank you, Art.

Now, moving on to Virgil, we find that, for example, the kind of searches that we do on Google. I think this is 2013 Harvard study which showed that searching for a specific name which is South African American, the ads that you get along with it could give suggestion that this person [Inaudible]

And that could really create a problem. This person is applying for a job, something you can think of various situations. To who is responsible for said issues. There is an ethic element also involved in it when private corporations work on these algorithms.

Virgil has done -- I mean is currently doing, I would say, cutting edge research in this area, cutting edge work in this area. So I won't take more of your time.

>> VIRGILIO ALMEIDA: Hi, everyone. I only have four things that are useful for me to say. So I think the first one, so I work with something called the Ethereum Foundation. The number 2 block behind bit coin. We do -- which you may have heard of. It sorry it's a difficult term. But you have little open source programmes like live in this cloud and inputs and outputs into them. And people like them because --

>> MR. VIRGIL GRIFFITH: It is forced transparency of algorithms. People say that sounds like really nice. Unfortunately you are not going to run everything on Ethereum. Transparency is kind of expensive. But people are still really into this. So I guess we can give you -- so platforms like Ethereum we can give you enforced transparency say for your finances or your simple contracts, yeah, things like that. Or other sort of simple automated processes. So we can definitely get that.

Another one, so we talked a lot about getting corporations like Facebook and Google to open source their algorithms. I would be very, very, very surprised if we ever got that because there is just so much money on the line. Like, really.

I mean even if we all agree this was 100 percent a good idea, like this is billions on the line. I mean they're not going to let -- they're just not going to do it.

So what you could do to get them to do it, so I guess you could try, so I guess you want to make the algorithms less valuable so that if you publish them, the companies don't lose so much. The most natural thing you would do is oh, Google, you don't want to give us your latest and greatest. Maybe you could publish your old algorithms that are however many years old. Oh, we've already gotten most of the value out of that. And most of our competitors use something like this, anyway. So they would be more likely to publish that.

That's one thought. I could hypothetically imagine like the tech world not flipping out if you asked them to do that.

Another way is a government could just pay them to release their algorithms. It sounds kind of weird for there being a wealth transfer from a government to a tech company like this, but they did the R & D. We want you reimbursed for this R & D. And the government says do you know what? Transparency is worth it. Here's a big wad of cash. They, you know, hey, that could work. I guess it depends how much this is really worth to us.

There's one other thing. There's something called anti-conditioning which I feel a lot of people don't know about. Mathematically this is not all lost. Can I -- is there a way to get a note pad or something? I guess I can do it over there. All right, I'll tell you about it. There's a way you can do force independents of a variable. You know how the probability of A given B, where the given means like you know B. There's an opposite one called anti-conditioning where you force ignorance of B. If there's any correlation with B, you sort of remove it.

So one common way you could think about these things is we have, say, these protected classes. It would be like race, religion, sex, whatever. We could say oh, okay. You know high tech companies were going to by law decor relate from those variables. It will reduce the efficacy of their algorithms and that will make them

upset, but, you know, I guess you would tell them just to suck it up.

[Laughter]

It leaves me kind of curious how much the quality of services would go down if we did that. That would be unfortunate if they went down. I guess you would find out.

Yeah, I guess that's mostly it. I don't know if you're interested. If you want to increase transparency in things, probably the best game in town is probably this Blockchain related work. Not everything on a Blockchain has to be transparent, but a lot of it is. It just kind of dovetails with it naturally. So if you want to make more transparent things maybe till all your, what, friends to do Blockchain stuff. So if you're a techie, we can talk to you about that. I can do it on Ethereum. If you're a none-techie, we aren't ready for you yet. You should come talk to us in about two years. I'm done.

>> MR. PRASANTH SUGATHAN: Thanks, Virgil. On to Judy. Judy has done a great amount of work in reliability. That was an area of work. The question was whether intermediary, like Google or Facebook could be held liability for what you posed online. That's third-party content. Here we're into a tricky area where we're talking about liability of work or let's say their own product. How it works. The algorithms that they made, the decisions made by these algorithms. For example, like why should I suggest it? What happens when the self-driving car crashes? Can the company be held liable for it? Over to you.

>> MS. JYOTI PANDAY: Thank you, Prasanth. So I will be covering transparency and account ability from two perspectives I want to first focus on intermediary liability issues. But looking at the data models that one of my panelists mentioned. And I want to introduce something called data governance, which refers to -- it's an idea of a web description of the way the training data is collected should be maintained by the builders of algorithms accompanied by exploitation of biases introduced by the data gathering process. And I think this particular notion is really at the core of understanding how do we assign liability? Because as many of the panelists have stated, that public scrutiny of the data will provide maximum opportunity for scrutiny of how these processes work and how they impact users.

This leads to other issue which is audibility. And how these models and algorithms, data and the decisions being taken by them should be recorded and made available to the public or interested stakeholders who want to assess the impact. And this is, of course, linked to the notion of companies improving their validation and testing processes and introducing more public scrutiny. So at the moment, what most of the conversation gets limited to is concerns over privacy or trade secrets or the revelation of analytics, say, for example, companies will often claim that if we put it out this, how are analytics is being done, then the malicious factors can probably game the system. That would impact users. And the security of the systems.

But, again, I think there is some benefit in breaking down the various steps involved in the algorithmic decisionmaking because while we think of it as just one singular concept, it is actually tiered and layered. And introducing accountability and transparency and thorough documentation, which is again open to public scrutiny at each of the levels I think is a very important aspect.

The other point that I want to stress is that algorithmic, introducing transparency in algorithms is also leading to a really interesting development in privacy law.

So, for example, I don't know if many of you know about the GDPR, but the

GDPR, which comes into effect, it's between the EU and the U.S., and it comes into effect in 2018. But it's got a provision for something called a right to explanation using which users can CEECA algorithmic decisionmaking. Under this right, the law gives users the rights to CEECA explanation of how the algorithmic made a certain decision about them. And while we see introduction of such provisions in legal framework such as the GDPR, it is also really interesting to see the counter movement from the companies' perspective, which is where they are pushing for prohibitions on disclosure of source code.

And I think that's something that we as civil society, academics, and people working in this field really need to pay more attention to because while most of these conversations take place at forums or platforms such as this, source code prohibitions are actually entering trade agreements.

So we can potentially have a scenario where the EU and the U.S. have now established this right to explanation where companies can go via the trade route path and actually get all the bilateral trade agreement route and actually ensure that nations or governments cannot seek a disclosure of source code. And of course that would impact all of the data models and the data proven ensure and the audibility issues that I mentioned earlier.

So, yeah, those are the two things that I really wanted to talk about, thank you.

>> MR. PRASANTH SUGATHAN: Thank you, Jyoti.

So we are in a state like, for example, Facebook research in what they call research, I'm not sure whether we can really use that term in 2014 where they tried to find out whether they could change the emotions of people, make people sad or happy by altering their news feed. They got a lot of protests about the way they did it. But that is how. That is the kind of power that this social media organizations and others, the bigger companies, have. They can change the way you feel. They can change the way you work.

This is something that we need to discuss in depth. And I have like brilliant minds here. I don't want to rush discussion of the panel here. So I would suggest feedback, suggestions, questions from you. Over to you. Questions?

Sadish. If you could just introduce and then affiliation also. Thank you.

>> Can you hear me?

>> Yeah, we can.

>> My name is Sadish, can you hear me? Sorry for that. I'm from India and I work with ICANN as a volunteer. I have three quick incidents to raise here. The first one is a very offensive 2015 incident that happened with Google photos. An African-American couple was auto tagged as gorilla. Now, we wonder whether this is lack of diversity on the testing team or something.

The second has to do with search rising with Uber or one of those car hailing, ride hailing companies, it turns out that one specific algorithm, the part of the algorithm, when it is late night, low battery, and the woman passenger, it automatically kicked into -- so sensing the vulnerability of the person concerned, it automatically turned into search rising.

The third is more of a buzz kill. A man searches for an engagement ring and chooses one online in a compute their is shared with his SO. So for the next two days, every page has an ad for the particular engagement ring. There is no more suspense there and partner also knows what it is about.

What kind of social engagement and responsibility? And at least as open source we as a community can in some sense audit or participate in algorithmic

decisionmaking. Because many of these are very large companies, like Facebook or Google. Does the user have any role at all in any of these processes? Thank you.

>> Just to add to the example that Sadish give, in 2015 we had two experiments which were conducted. And in one of those, it was observed that when people used to search for jobs on Google, males were shown ads with higher paid managerial parts while the female counterparts were shown the less paying job. And that was mostly because the EI, the algorithm behind it, it assumed from learning from the data that well, females, were generally at a lower income jobs employed in the society and therefore it used to show them a lower paying job instead of the higher paying job. Equal opportunity were denied to them. So I think that is one more case of algorithm being biased. It can learn from behavior of the society.

>> Sorry. Just to add actually this situation like this is much older than most of us also imagine because early to mid 90s, you had what was the broken window policing policy in some of the major cities in the U.S., which sort of assumed that if there was a higher percentage of broken windows in a particular neighborhood, crime incident rates were higher, therefore extra policing is required. And that sort of led to this vicious circle of being naturally sort of biased towards certain groups and minorities within the U.S.

A great example, and by the way there's this amazing book that came out rather recently called the weapons of Mac destruction. I'd highly recommend that you pick that up because it's got a couple of really interesting stories from again back through the 80s and the 90s looking at even something like university rankings. And this is a question I have a vague background as a psychologist somewhere in my past. So this is a question where behavior comes into play. Is it how algorithms can also affect and sort of bypass the behavior of individuals. So the university rankings that I was referring to over here, I'll give you the name later, is a prime example because it incentivised schools to build certain building activities, focus on certain metrics opposed to others. So just another question and something for us all to consider over here.

>> MR. PRASANTH SUGATHAN: Rajat, do you have a response? Especially the example Sadish gave about Uber. The vulnerability of the person if you hike the rates. Also ethics question.

>> MR. RAJAT KUMAR: Sure, I don't have much opinions. We do know. This is a nice study. It was something like so an iPhone app can know what the current battery is. And they also want to know this so they can give you like a low power version of the app. So in their case, Uber found through their own independent research that unsurprisingly if you have very little battery, you are willing to pay more. Which makes sense. So it's unclear, I'm not aware of any evidence that they're actually using this information, but it's mainly shown that they could.

I do know there is one on the flip side, there is one that I do know they are currently using. They call it, it's called like location-dependent pricing, something like that. So you have two like condominiums like right next to each other. One is like super expensive. The other is not so expensive. They will charge you more if you're going to the more expensive one. They used to say well if you are going there, you probably have more money and therefore you're probably willing to spend more. So, you know, I don't know. So these may not all be incredibly terrible for society.

>> To add on this topic on this slide, it's like this pricing strategy, it's not that new again. The same spec of phone.

>> No, mine's much better.

[Laughter]

Look how thin it is.

>> Okay. The same. Like let's say Android 1 or IOS1. Even the same spec. Why apple can sell it in the much more expensive.

>> You're not seeing the logo?

>> Yeah. And people are willing. People are willing to pay, right? So in this case I'm actually not -- if in this case it is public transportation and people really have to rely on it, I think that's a really serious problem. But then in the area that like, it's not how to say, people's lives don't really depend on it. Having a having recollection, I'm not sure because it may have all entered the cons. Or the cause of the regulation itself means the past, the thing that the public can have back. So I think should be aware. I'm not saying this is a good idea, that you would discriminate the price. But the case of Uber I'm not sure. That's it.

>> I like the idea of charging the iPhone users more for using Uber. That could be really nice.

[Laughter]

It would be a really good idea.

>> I mean they've shown their case.

>> So it's a question for Virgil.

>> MR. VIRGIL GRIFFITH: Again? Sure, what's on your mind?

>> If we manage to get what we want, that is regulators demand transparency of source code, data models or alternatively data, sorry, source code audits, how can we be sure that the source code that has been disclosed is the same source code that is ruining?

>> MR. VIRGIL GRIFFITH: The answer -- okay, there are some ways you could do this, but it's tricky. So there are some things called Intel SGX. Where you can kind of run a piece of code inside a little box. And as long as you don't have a clean room, you can verify -- I mean a cleaner where you break apart.

>> Could you also explain what a clean room is?

>> MR. VIRGIL GRIFFITH: A clean room, it's from chemistry? No. From electronics, very tiny little stuff in the air will like make it not work. So do surgery on like a chip, you have to have a clean room. So there are ways that you can run things a little trusted box. There's shipping on the Intel CPUs. They'll trust the box, the SGX. You can hack it if it's a clean room. Maybe a \$10 million investment. It's kind of a lot of money. So I think the short answer is: You can't. So you can't actually know this is actually what they're doing.

I guess you would say hey if you lie to us, we'll be really upset with you. Hit them with a really big stick. A lot of regulators have this issue where they have like one weapon and it's like the nuclear weapon. And so as a result, they're very reluctant to use it. But they always have it. So you just kind of hold it over them and say if you don't play nice, the bomb will come. And usually they play nice. Because, I mean, because sometimes the bomb drops and they get really upset when that happens. But, yeah, in short there's no way you can really enforce it. The closest things are probably the Intel SGX and having like a billion dollars penalty for lying.

>> I didn't understand. What would SGX? How do you do it? Once the Code is disclosed? You load it onto --

>> MR. VIRGIL GRIFFITH: Let me make sure I get this right. I'm not an expert on the system. How does it go? It goes something like you can verify a piece of code was run on the SGX. And you can get the hash of that code. So if they

published the algorithm, and then you could say what is the hash of this algorithm? You could say I confirm it is this hash that was run. You could do something like that.

I mean, again, if it's like a multibillion dollars thing, it costs more than that to get a clean room. But most things. Anything that's not like really important.

>> Yeah, I heard like governments and accountability. So that's kind of an oxymoron. How can we get around that like without using governments? I mean there was discussions about asking governments to pay. But we can't even get governments to provide us the basics.

>> MR. VIRGIL GRIFFITH: Do a Kickstarter.

>> Yeah. You see this in the food value chain, too, processed food we know is supposed to have standards and all that but that never gets regulated, we don't know what we eat. Maybe thinking a different way how we can socially engage in doing this.

And then why do we expect artificial intelligence to be unbiased when human beings themselves are biased?

>> I can do a little bit of the second. I don't know. I am stealing from you. But also this probably related to the question that -- about the source code. So we have three parts, at least to my understanding here, right? The input part, say black box part, the processing part, say, the middle, at the middle. And then the output part, right? In the input part, that application, like if the data is sensitive, it shouldn't be collected from the first place if it's avoidable, right? And in the middle part, we are asking like okay, please open the source code. Please explain how it works. Operating, whatever. Which then in this situation, very difficult, right? So then there's the last part, the upward part. This is what the FTC just made suggestions I think just this year that they understand that like to auditing, to the audit on the middle part, this processing is really going to be very difficult. But what you can do is like the company who responsible enough should set some like scarring models, right? And do monitor the results that's generated from the operative and see if the decimation actually happens or not? And how to try to fix it. The middle part is very difficult to monitor discrimination at the result part, the end part, the third part. It's maybe more visible.

>> So regarding your first part of the question that you said involving not -- not involving the government. I think as Virgil has rightly pointed out, it is very difficult for these companies, the big organizations, for example, Google and Facebook to actually get their source code and gourd them, to have them displayed publicly or to open source them, for example. Because they have a lot of money, different interests. Billions as you said billions of lines. So I don't think that without having some concrete legislation or maybe some government intervention we can have them disclose their algorithm.

>> [Inaudible]

>> I think that is more complicated here than that.

>> And this is where -- this is why a transparency and -- are different things. We cannot ask -- to keep their recipe. But if the recipe cause public health issues, they choose accountable for that. Then they get -- even though we internally understand the middle part, but if the result cause some problems, the company should be accountable for that. And this is what we're asking for.

>> The question is what is the de minimus steps that we can have to avoid -- that should be the key word. At least to avoid harm.

>> So three things. Algorithms discriminate. They do it generally on gender,

race. This is out of the question.

I agree that we cannot get the recipe but if we get and feel bad to be responsible, they cannot lay to be the argument in the pipes. They are not the pipes. But I'm also wondering: There is a lot of algorithms that is used for groups of people that really has no decisionmaking in the actual risk. I talk about migrant, displays, refugees. All the U. N. circus to refugees, migrants. Those people are really fighting for their life. And they provide all the data used against them and discriminate them and profile them. So I would like to know how to push all this U.N., all the work on the interest of people to be aware that they're using -- they have them one day to protect. The third thing is that I think we need to also build up maybe a smaller but an infrastructure that is safer and that it's own. It's built on transparency. That accountability has the other, the Blockchain that shows it could exist because it's clear for very sensitive information. If we want to em power people we need to have our own algorithm. Because they we can't really pressure. But we if he had to create information and knowledge that is based on an algorithm that is at least less biased.

>> MR. PRASANTH SUGATHAN: Rajat, would you like to take that?

>> MR. RAJAT KUMAR: Well I definitely think that your point, the issues surrounding the Blockchain. I think that's I'll defer to our expert here. I meant Virgil. I'll pass it along to you in a second, yeah. I definitely agree that this is something that -- even beyond migrants or refugees, this is something that you could even sort of find the parallel in rural India or rural Pakistan or even to a certain extent you would say drool USA, you know, the belt, the Bible belt of the U.S. Because you have people who may not be as em powered to understand implications of the data and the interactions and the transactions that they're having online. I'll quota example. Bun of my colleagues used to work for management consulting before he joined the foundation, and one of the clients that he was working with, they had an A0 sheet, double imperial sheet of the -- in tiny, tiny, size -- font. And that would be one of the key algorithms. And they said this is the simplest way we can do it. We cannot simplify it further. I think this is one of the huge challenges. This is something how do you make people aware. I think that it was my shadow the practical tech project did a great time of trying to cull the key words from terms and services. But I think the last time that they updated was maybe end of 2015. So kind of --

>> Binding the UN on a date?

>> MR. VIRGIL GRIFFITH: The thing is, we can be -- I mean this is where I'll probably get lynched outside, but I mean we can be extremely idealistic and say no, no, no, we can shift all together. But when we consider individuals who have low literacy to begin with, we cannot just ask them to shift on two platforms such that dependent on open source platforms I think would be an excellent place that you can use for such. We can't immediately do that. There has to be the sort of shoe Horning in.

So I'd say that yes we have to acknowledge the importance and sort of these larger more proprietary platforms play. Would you, that was an alliteration. Try to say that very fast and. Proprietary platforms play. We have to acknowledge that.

But we have to push for greater transparency at two ends. Of course one is their back end, which is something that everyone here will be talking about. But also in terms of what they put out. Their Terms of Service. That has to be, you know, I think somebody mentioned 83 days is what it will take for you to read it. MaRick on day zero. You have to be able to cull out the important bits from that and be able to

explain that this is the implication that what YouTube has for your profile online.

Virgil, maybe this is something you want to take issues surrounding the Blockchain and how that can help.

>> MR. VIRGIL GRIFFITH: Yeah, I don't know. Blockchain things. In short, Blockchain gives you a way where you can have forced transparency on very simple programmes. And so I guess the more things in our world that are simple, the more we can make them transparent. And that would be a good thing. I mean, it doesn't give anything, Internet or something, but it gives you something. Especially if you shoot for things like finance because they're actually surprised and simple. I don't think you actually saw concerns. I don't know. But it's something. And a law is kind of doom and good. But we have like one good thing. Right.

>> Just one question.

>> I have two questions on the extreme. One is like most of the protection, my name is Ed Ligaspi. I'm from southeast Asian -- alliance based in Bangkok. How effective really are those? This is a small question. How effective really are those individualised measures that you can take, turn off your use incognito mode. Those things. Again, in fighting that the individual level.

And at the bigger perspective, where do you -- what would you suggest would be the way to advocate against these things? Or for more transparency on these things because Human Rights. I'm a Human Rights advocate. We have this very -- this is a Human Rights responsibility. Clearly if you think about it from even from a budget perspective, Facebook might be even bigger than the United Nations. And they're certainly more powerful than many of our governments. And it upends, for example, the direction of these so-called standards because you were talking about influencing decisions, not impact, right? So where do you think advocacy on this matter should go? Especially for EFF.

>> I'll try to attempt an answer. To be perfectly honest, I don't speak for EFF.

So, many of the questions can be asked Coca-Cola to give up their formula. I think for algorithms, it's not as simple. GAFA, Google, Amazon, Facebook, apple, are huge. And one thing that we can probably count on is that they would want market access. They want more profits. And this is where national sovereigns probably become more relevant than the ITU or the UN frameworks because, again, there is funding issues. There is also a knowledge gap. So UNESCO has really stepped up efforts in the past 1-1/2 years. They've been organising CDs of workshops and talks on algorithmic accountability. From what I understand, it is one of their major teams going forward from 2017 to 2020. That we would be getting into machine learning and algorithmic account ability. So while we should look at UNESCO and those measures probably as more intervention from improving knowledge on these issues, I think in terms of actually exercising control on these large platforms that now are the face of algorithmic decisionmaking would probably be coming from national governments and market access and competition rules.

So advocacy again would probably need to look at the different areas that these companies are pushing for rules to protect their sovereignty over their algorithms and where the tension between national sovereignty, company sovereignty plays out. And also kind of empowering users. So, for example, how do we go about pushing these large companies to provide redress for the individual users? I mean the right explanation is the perfect kind of development in this scenario where two large blocks are kind of trying to gain control over this? I don't have an easy answer. I hope that was helpful.

>> MR. PRASANTH SUGATHAN: We have a question from a remote participant. From Thailand.

>> The question is: Would Internet of Things, IoT, help to reduce the social disparity for the governments in collecting data? I think Art mentioned smart watches and Fitbits, related to that.

>> I already speak about that. Yes and no, right? It's not the data collection itself, right? The more data we have, yes, it's of course possible to be better. But then again, as I mentioned earlier, where those data come from? Which social groups, right? The data is collected from. Or which data in the end has been used in the decisionmaking. I think that's a problem. So it's not only collecting enough data. It's not about the quantity. Like let's be like cliché, right? It's not only about the quantity, right? But it's where does the data come from on the sensitive data that shouldn't be collected in the first place, how are you going to use that for the decision? I think that's more about that. But of course like if those like IoT Internet of Things. Cheap enough and at the end we can say that it can help us to have a better public policy. Yeah, of course we should go for that. But we should sit it down like how -- because the thing is like this Internet of Things once you install it. Once you deploy it, it's going to be very difficult to upgrade it. Right? Many times one is deployed, it's there. And that is forever. So I think it should be quite a certain, a little bit before actually deploy this.

>> MR. PRASANTH SUGATHAN: And lots of variable of IoTs and the surveillance. That's a different issue.

Question?

>> Hi, I actually have two questions for Virgil. I have two questions for you.

>> MR. VIRGIL GRIFFITH: I'm so sorry.

>> I kind of interrupted your conversation. So the first is when we say like we can't fully understand models with respect to algorithms and datasets and stuff, I just want to unpack that a bit because, for example, in some techniques used in machine learning, for example, in supervised and unsupervised learning, we know for a fact there's always a human sort of guiding what the machine does, in the sense that you decide the attribute that you train on and you decide the data that you give it and you decide the algorithmic model.

But my question specifically my first question to you is what is the level of predictability we have in neural networks. Like if we were to ask the question of what do we know for sure when it comes to using a neural net work, what would the answer look like?

And the second question I have for you is with respect to fairness. So a lot of policy and legal discussion around algorithmic transparency say that we want fairness in machine learning. But I'm wondering what that looks like to somebody who develops those systems. So do you say okay, if A asks for something and B asks for something, we won't discriminate based on fairness. Is that how it looks like? I know these are impossible questions.

>> MR. VIRGIL GRIFFITH: Okay, I can give you somans but I'm not satisfied. First what do we know about neural networks? How do we characterize them. So three layer neural network is something turning complete which means it connects to any function you want it to. So just knowing that the neural network actually tells you very little. So that's sad.

The next question was sorry, there was more.

>> The second on fairness and learning.

>> MR. VIRGIL GRIFFITH: Yeah, people define fairness really differently. The classic one, the one I really like to use is with predicting violent crime. As to violent crime, I mean men commit like, what, 93 percent, something like that? Maybe even higher. So when you say when it comes to detect violent crime, should you spend 90 percent of your money toward getting them or should you spend it 50/50 between men and women? Or should you spend it 33 between men, women and boys. People would say that sounds really weird. I thought we were being fair. So in general, people -- I mean, fairness is kind of like justice. We all know we're in favor of justice but we don't really know what justice is.

>> So I guess you the reason is more helpful from a legal or policy point of view. If you're -- instead of seeing fairness, what is an example to use.

>> I will give you an example. In the male/female example in committing crimes. Say oh, do you want that to be split 50/50 or do you want it to be true Bayesian. Where you just do like exactly what the numbers say. So if it actually says oh men typically commit this crime more, we should spend more resources on men. Something like that.

So the closest thing -- there is a that you can enforce it being uniform based on some classification. So like -- gone for the data to say no, algorithm, you're always going to make it 50/50 between men and women. So the anti-conditioning thing. I mentioned conditioning before can get you that.

In order to understand how that works, the math is actually kind of interesting. I mean I've heard like staff people talk this is a way how you could implement this.

>> Thank you to the panel. I'm from the Philippines. I have a comment and question maybe for Jyoti. I don't know if you saw yesterday, but part of the big picture of algorithms is another big picture of Big Data. And I don't think, at least in my experience, you've had enough public policy discussions about Big Data and its premises and its impacts. For example, it's not just the privacy issue, it's also big degree buying up all the data analytics company. So I don't know if Big Data is a fuel of algorithms, but maybe that's one point of attack. But we have public policy considerations seriously, which I don't think at least in my country has not yet been had on Big Data.

The question is more on -- it's in the attack advocacy. But it's also from the comment of where -- yeah, the right to explanation, et cetera. So legally my question is: Is the strategy, is the battle now, a legal battle. And do you hear, IPR matle (?) meaning the Code example. Meaning should we look at this as a Copyright thing versus transparency? So is this a legal battle. Is it an anti-trust. As you sort of referred to it when we go to national sovereigns out to be -- context. Is it a standards battle? Meaning I don't know what IoT, whatever, another technical guy, but are there some openings within the standards process?

This is what I know. I know that when we were doing encryption for NSA penetrated IETF and the standards body because they thought that they could influence a discourse through standards. Code is law, right? So is it also a standards battle in this sense? So I'm just trying to be where like at the saying out of the where do we wage these battles? Thank you.

>> Thank you for the question. Your question actually has the answer in it. Fortunately/unfortunately, the battle is really fragmented. So in a sense, this is problematic because some of the issues are really connected, as you rightly pointed out. As -- it's very difficult to gain consensus or collaborate or bring in resources to tackle the problem at hand.

What is also happening is that -- so let me give you an example. For example, when we say e-commerce and something just not e percent. It is very difficult for depending upon who is talking about it. Stakeholders, users, a topic like every government differently. Obviously models. If we take that same motion and apply it to something like algorithms, again every is important in my view. Whether it is the standards, whether it is the back end, whether it's the source code, whether it is a government issuing for anti-trust or whether it is not we make these large companies more accountable and transparent.

I think the battle for advocacy is on different fronts. That's not necessarily because given how complex this issue is, it is actually important that we tackle it from different layers.

You rightly mentioned that standards organisation might be the more obvious point of intervention. But there is a huge problem of really getting integrated into those standards mechanisms and how they work, which takes a longer time. For the public and for public-facing, for example, where biases is concerned. Taking more Big Data or actually case -- how these decisions are impacting users' rights and how they can open up their perception of viewing this problem from a more personal connect might also be helpful. So, again, there is no right way. But, yeah, you are correct that it is fragment.

>> Who's your privacy is the main battle.

>> MR. PRASANTH SUGATHAN: We are running out of time. Two questions. If you have questions, we'll let the panelists answer both, too.

>> From southeast law and centre law Philippines. I just have two comments. First is I think the problem or the challenge with algorithmic transparency is in some context it might even infringe on privacy. For example, encryption, data encryption. And, for example, very specific sample. What's up using in -- if sensitive countries like USA government. But it seemed like the fault -- if you have a government that's not technically, so it's you believe useful. But if you have, so just the U.S. I think regulation can also be used for the public interest without really looking at the algorithm but, rather, at the input and some of our panel. Effects the SUU in the state and they regulated it for the public interest. Thank you.

>> MR. PRASANTH SUGATHAN: One last question. So then we'll wrap it up.

>> Very, very brief. Just to respond to comments on UN agency initiative. In June, there's an artificial intelligence summit organized in Geneva with a dozen of UN agencies to reflect on the icicle. The decisionmaking context. Secondly thank you for in February UNESCO organized events to explore that because now it's also taking over the tourism activities. So we're over implication of algorithm in terms of privacy, statute you are and certainly on the human -- contacted by -- where it is from last December. This was led by U. N. global. And we had us maybe UN agencies join together to work UN privacy data breaches. All the human interactive in which I will have the acid coat as I was saying applied. In the -- we have a lower application, study of the implications of the government. I think this would be finalised later this year.

>> MR. PRASANTH SUGATHAN: Thank you. Great participation from the floor. I'm sorry that we have more questions than answers towards the end of the session, but that's how the topic is. And let's let the debate go on. Thank you. And thanks a lot.

[Applause.]

This text is being provided in a rough draft format. Communication Access Realtime Translation (CART) is provided in order to facilitate communication accessibility and may not be a totally verbatim record of the proceedings.
