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We are going to have a very, very, very interesting, I'm looking forward for this panel discussion.

We are very excited about this. But let me show you what is coming in the next sessions. In the next sessions, the agenda is coffee break. Everybody wants coffee break. That coffee shop is amazing. So we have the plenary now.

We have all these other parallel sessions that are occurring. Take a picture if you want. One, two, three. We have coffee break. And then we have a plenary and the closing ceremony. As always, we have some surprises for you.

So if you want to come to the closing ceremony, I will not mind if you come. Okay? So we have a very, very interesting panel discussion today. Actually, we have a debate. We are going to take gloves off and go deep on that.

And I have, I'm fighting with this. AI is better than me maybe on this. So the word of this afternoon, it is Mujo. Mujo. Which means constant changing. Nothing is, stays the same. Everything changes.

And today, we would like to see if you are pro AI or against AI, how that is going to change after this discussion. Nula, please. Let's

Hello, can everybody hear me? You all sleepy after lunch? OK, oh, that's good. That's good. So my name is Nula Cowan, and I'm with the Digital Earth Partnership Team at GFDRR. And I am here with you today to moderate this eagerly anticipated debate about the merits of AI over human ingenuity.

OK? I have too many. I haven't to know fans. I have too many props here. So our debate for today is that this house believes that AI, rather than humans, hold the key to understanding risk today. Little bit of a deviation from the previous slide, but this is what we'll be arguing.

So what is key here is that we want you to decide on whether this is pertinent today and now. Should I be using these tools or should I be stepping back? So I want you to think about that. We all know that AI has impressive credentials and capabilities in many, many areas.

But there is much debate as to whether the machines can compete with the creativity and the complexity of the human mind. We know that AI can process large amounts of data, can do it faster than we can, the algorithms can identify patterns and make predictions that would really mystify us and it can do it at a scale that we're just not capable of doing ourselves.

The critics of AI would say that it lacks creativity. It lacks intuition, that it's limited by its programming and it can't respond to the unexpected. So humans, we have an adaptive capacity and can AI match that?

So we've got two wonderful debaters today. And the first of these is Bruno Sanchez. Bruno, if you want to join us on stage. So Bruno is the director, the executive director of Clay, which is AI for Earth nonprofit.

And they focus on making AI learn Earth using open source and open data. On the other side, we have Bruno Sanchez. And we have Ivan Gayton. Ivan, I think he's loaded the audience here. So Ivan is with Humanitarian Open Street Map, where he leads on innovation and draws from a very, very long career on innovation, technology, and specific to humanitarian response.

So welcome, Ivan. So the rules of engagement for today is each one of our debaters gets five minutes to make their argument. Then they will have another five minutes each to rebut what the other debater has presented.

And there will be some wrap up comments. But to make this interesting, we want to see where our audience is sitting on this. So hopefully, if this works. Just a minute. It's going to work. Yay. OK. So if you can get your phones out and give me your opinion on who holds the key to understanding risk today, now as it stands, AI or humans.

So I'm going to give you a few minutes on this. Thank you. Don't be shy. Your name isn't going to be up here. Thank you. See if we can get it to 100. Thank you. I don't think 100 is going to change it.

No? Bruno, I'm shocked. You've got your work cut out for you. So without further ado, the floor is yours.

So yes, I have my work cut out. I'm going to demonstrate with three main arguments that AI holds the key of understanding risk today. And those three arguments is that we already decided this question.

And thankfully, it's pro because it works. And when it comes to applying AI for Earth, there is one of the most promising areas of AI to deliver the promise. So number one, we already decided. What I mean by that is imagine a world where we don't use data to understand risk, where we don't use computers to understand risk.

The world of, I don't know, 100 years ago. We thankfully don't live in that world. We use technology. We use computation. We use data. AI is a step on the same path. It's not fundamentally different.

The difference is the magnitude of that step. AI has proven lately to be extremely good. It's like going a map from multiplication and addition to Fourier transforms and integrals. It is working. That's my second argument.

It's good we made that decision because it's working. Yesterday, we had a session with Google that computations that used to take hundreds of hours come within one second. And if there is an area where this is important, this is in disaster early response.

We're literally every second we can gain this life's saved. And AI not only has the promise, has the experience of delivering orders of magnitude faster, better, and cheaper predictions. So of course, AI holds the key to understand risk.

And it not only shows that, it shows it in a way that empowers people, that empowers humans. Because those AI models have these traits that are also unique. Like for example, we can pre -compute a lot of the effort.

And that's one of the reasons it's so fast afterwards. We can front load all of those computations. I'm talking about foundational models, if you know what I'm talking about, that then enables you not only to then take the model to the communities, to the people, so that when you get those responses, those responses can be adapted to your needs.

It is technically possible that those second answers can be adapted not to your nation, to your region, but to your building, to your business, to your family. AI holds the key to understand risk today.

My third argument is that specifically in understanding risk or specifically on Earth, we have a potential that is much beyond making pictures of cats, or making a chat GPT, of pretending to be a human mimic in the voice.

We have a tremendous amount of free data without the legal issues or complications that has in AI for text or other domains. We have petabytes of data about Earth, and we have data that covers the whole world so that that vision of a world that has second delayed answers works for Tokyo, but also works for Colombia, or can work for Colombia.

AI holds the key to understand risk. So if we put together that this is a decision of the same path that we have been taking, then it works. And specifically for understanding risk and understanding Earth, understanding climate change, understanding sustainability, AI holds the key to understand risk.

Well, my distinguished opponent has made a bit of a false dichotomy here, this idea that AI is simply an extension of using computers. Does not using AI or not thinking that AI holds the key to the future mean we're going back to hand crank calculators?

Now the question really, the question at hand here is who holds the key? Another way you can sort of think of the idea of who holds the key is who's driving? Who should be driving? So Bruno mentioned the idea of we can take the model to the community.

Well, who's in the driver's seat if we, the technocrats, are taking the model to the community? Who owns the model? Who is actually in control of what these predictions actually look like? Who is deciding what are the important things to train the model on?

Who is deciding how we feed back to the model? Who is deciding what sort of corrections we apply to the model? So the question in my mind really, who holds the key? Well, who's driving? Who should be driving?

I mean, you mentioned that if it works in Tokyo, it'll work in Colombia. So here's this idea then, if it works in a high income, very sophisticated, technologically advanced place, it's also going to work in rural villages in lower income countries.

Really? Are the AI models that we're creating in sort of proprietary settings in high income countries? Are these really actually going to reflect the reality and the needs of people in low income countries, in vulnerable countries, in places affected by conflict and fragility?

Well, don't get me wrong. I like computers. I'm not sure I believe that what we're using right now is AI. I prefer the term machine learning, which I think is a better description of what these models are doing.

And I certainly believe that we should be using them. But who holds the key to understanding risk in the communities we serve? Who should be holding the key? Who should be putting it in the ignition and driving the car?

The communities, the humans. So let me sort of give you a bit of a contrast here. You have, we in the geospatial field, I'm with the humanitarian open street map team, and we're very interested in geospatial data.

We think that geospatial data holds a lot of the key to managing risk, to understanding and managing risk. Now, if you're trying to create geospatial data, sure, what does that look like? That looks like you're collecting sensor data, you're collecting satellite images, drone images, you're collecting GPS traces, cell phone positions.

That sort of layer of raw data about the earth. You're digitizing that then into representational features. There's this movement from raw sensor data to things that are actually representations of features on the planet.

And that indeed is where we have seen tremendous advantages in machine learning models being able to distinguish the pixel that's on a building roof versus a pixel in the forest or in a parking lot or something like that.

Okay. And so assuming that that's something that we want to do at scale. And as Dula mentioned quickly, because certainly it's the case that AI models or machine learning models are capable of digitizing features from imagery much more quickly than humans are.

And that's a huge advantage when every time a new imagery set comes out, you vector data set from it. All right. Well, here's one model. A big corporation builds a black box that takes imagery and training data in one side.

The training data is, you know, it's not something that we can see outcome predictions and then the humans are actually brought in to validate those predictions and maybe clean up the final data for use.

So essentially the AI is doing the creative work is doing the heart of the work and the humans are a component in the system. Essentially, the AI is in the driver's seat and the human is there for validation.

And that's very much the sort of proprietary model that is actually happening in our sector. Well, here's another model where something that some of my colleagues are working on, FAIR, which is free AI for resilience, where actually it's not a black box.

The human actually does some digitization in various strata of the places they're trying to detect features. They then run the model. They decide how many epochs they'd like to train it on to see if it underfits and, well, no, we need to detect more buildings.

Well, no, now it's overfitting. It's not detecting anything except exactly what we've already digitized. And then the human goes back and forth and iterates with the AI until they're getting the predictions and they want, well, who's in the driver's seat there?

So the question here isn't whether we should use machine learning models. It's who should be in charge. The humans or the AIs. And Bruno, I'm happy to throw that question back to you. Who should be in charge?

Who should be in the driver's seat? Who holds the key?

Actually, that... All right. There's the key. I have the key. Ivan, you're right. Who should be on the driving seat? Of course, humans should be on the driving seat. Understanding is not making decisions.

Understanding is not driving. Understanding is processing data, processing what we have to support who makes decisions. Because AIs cannot be liable or accountable, AIs should not make decisions. This is something that comes from, I believe, from the 60s on IBM.

Yes, we should be on the driving seat, but the machines we work do a lot of work for us. They do a lot of heavy lifting of processing the data and helping us move and pay attention to the things we should pay attention.

And especially for the great work you do for humanitarian open street map and the communities, the communities should be the driving force. So I believe that you're not really arguing if we should use AI.

I think you're arguing how we should do AI. How we make AI so that, in my view, is the key to understand risk, but to support people, to support communities. And that is the importance of the three what, when, and how.

What I think is clear. We have seen how AI has revolutionized so many areas of transcription, translation, summaries, making images. You know what? All of those cases, or most of those cases, it's the same architecture.

Transformers. The T in chat, GPT. But we have not seen transformers in understanding risk as far as I know, or at the level we've seen it. So it's clear that the lowest risk architecture for AI is identified.

The what is clear. Let's use AI to understand risk, and we can use architectures that lower the unknowns. How is important, as you rightfully say. How we empower people. AI is not a replacement. AI is a tool.

It's a human tool. It's a skill. It's a human skill to create AIs, to put AIs understanding the data, to help us understand what is happening. So for as long as we empower AIs to understand risk, but we make the decisions, I think we both agree on that.

And that's what I think AI holds the key of understanding risk, not on making decisions. But then the last one is the when. When should we do this? Now. Now is the time to do that. Why? Because it's already proven to work.

There's a lot of papers of how AI is revolutionizing areas like weather prediction with Aurora and Microsoft, with Huawei, Apple weather, with many others. And you're right that many of those models are done by large corporations with large budgets.

And they provide a good service. But there's another way to do that in the open. Open source, open data. And that's what I'm saying that AI for Earth is key to show that there is another way to do that.

And I've been lucky to work with your organization, to work with the World Bank, to work with large corporations. And I believe this question is so important, the what, the how, and the when is now, that we created an on -profit to do this thing.

That's the one that we created. We raised funds and we're doing this work to empower you, to empower the communities, to empower, to another way of making AI because I strongly believe that it is AI, the one, the key that holds the key of understanding risk today.

So I believe in closing that next you are, there will be a keynote. How AI is being used, has been used to critically understand risk. I also believe that the person doing that keynote is in this room and is someone who has probably voted just to this proposition.

Why? Because we are in the sweet spot of having an outsized opportunity to lead and to shape. So you can choose to step back and not engage in the path we've chosen that seems to work, that has worked in many areas.

But you can choose to empower yourselves, to empower your organizations. today to use AI to understand risk. So that's why I propose that we should vote in favor that AI rather than our humans hold the key to understand risk today.

So the time is now, you say. And we agree that open source and something that fundamentally belongs to the community and where humans are in the driver's seat is the way to go. Is the situation now, if we're going to do this now, is the power of AI and machine learning in the hands of the humans right now?

Is this the way it's playing out? Allow me to drop back in time in the whole geospatial world and understanding risk. Back in 2004, when I started in humanitarian work in Darfur, there was this idea that GIS had to be quality assured, which meant that there was a couple of GIS gurus with a bunch of ARC GIS equipment and a big plotter and a trailer with a generator, and they would provide all the geospatial information for all of the humanitarian aid work.

And by the time Haiti came around in 2010, it was there as well, and you started to have this weird open source volunteer digital groups providing some of the data. And the guys at the Humanitarian Information Center, anybody remember that, the HIC, they were all saying, well, this stuff isn't quality assured.

Anybody can contribute to that data. It can't possibly be any good. Turns out it wasn't bad. By the time Typhoon Haiyan came along in the Philippines and then the Ebola outbreak in West Africa, that whole paradigm was done.

The Humanitarian Information Center, run by UNOcha, they didn't exist anymore. And the only game in town was the open geospatial data. Okay, so what happened there was, as a sector, we all kind of realized that there's going to be geospatial data involved in humanitarian action.

The question is, is it going to belong to proprietary corporations, or is it going to belong to the community? Is it going to be driven by geospatial consultants, mostly based in wealthy countries, or is it going to be driven by communities?

We have our answer now. We took the right fork in the road. So the now of, say, 2012, we made the right decision to incorporate geospatial data in so far it was actually driven and owned by communities.

Well, we're at a similar fork in the road now. You say the time is now. Okay, it's now. So the question now is, is the power of machine learning for understanding risk, is it going to belong to the consultants?

Is it going to belong to the technocrats? Or is it going to belong to the communities? The model, is that something that we bring to the community? Or is the model for one particular neighborhood of one particular city somewhere in Southeast Asia, does that belong to the organization that sort of develops the AI and has the billions of dollars worth of server infrastructure and cooling and electricity and all the things it takes to run?

Or is it going to belong to people at the edge of the cloud, the people with small computer resources does the model belong to the community? Or does it belong to the technocrats? The way I see this industry going right now is that there's kind of an expectation that people get the data.

You can have the output of the model, but the model fundamentally belongs to somebody who owns it. And I say, I'll be with you that the time is now when the model belongs to the community.

Thank you both. Very compelling on both sides. We do have some time for questions from the audience, but we do want to see what you think. Have you been convinced? Have you been swayed? Do you want to probe any further?

Do we have some questions? Everybody's being shy after lunch. No? Hey, one from the floor.

I have high jacked your questions, my apology. I think a key concept in probabilistic modeling is that a lot of what can happen hasn't happened yet. And so I've always wondered, when we look at AI, it's obviously trained on data.

But how do you use data that hasn't seen many of the things that can happen to then inform what could happen? And the example we're here in Japan is we had to talk earthquake, cause a tsunami, that caused a nuclear meltdown.

That's not something that you'd ever pick up in the data. So how does an AI or a generative AI ever account for these types of mechanisms in understanding what could happen in a risk scenario?

That is a really good question. I don't know. But I know something. And I know that AI is explicitly designed in two things that help. One is the long tail of effects. You don't prescribe what to pay attention to.

You sow data. And the other one is that the concept of loss. AI tools have a method of how confident they are. In their predictions. So yes, things like Fukushima didn't happen before. So a priority strategy to consider effects has a hard time to understand that.

But we have data of those mass functions individually in other contexts. And what happens with AI is that then it's going to be able to pick up the way it fails. So landslides in Tokyo has not happened.

But landslides in other places in the world have happened. So mathematically, what I'm trying to say, that especially for AI, for Earth, the universe of possibilities is much smaller than mathematical possibilities.

If there is a landslide, it's not going to be a pink, fluffy space, which is a mathematical possibility. Landslides are going to have a signature. We've seen landslides in other places in the world. We've seen failures in nuclear plants in other places in the world.

It's on the data. So the ways things fail individually, it's on the data. And if someone has the option to put all of that together in a new context, it's a tool like AI. Because it's looking at patterns at every level.

We can talk about architectures to do that. But a key concept here is the self -attention. Or the relation of things with its surroundings. AI is really good at understanding context. And it's really good at understanding extreme events to the point that it knows when it doesn't know.

And then we can pay attention to the places that have higher losses and refine the model. So my answer to you, again, trying to make it brief, is that it's a really good question. I'm not saying that AI is a solution for everything.

But we can run the models and see where we see bigger losses so humans can pay attention to those things. Not other things that we know can happen, but the things that we know AI is having a hard time.

I mean, I have a very quick rebuttal to the idea that AI is really good at understanding context. And my rebuttal is, no, it's not. AI is actually pretty good at understanding deviations from statistical norms.

Humans are good at understanding context, which is why they should be holding the keys.

We have time for maybe one very quick question. Yes.

So I don't know if it's quick, but so it should it looks like you agree on the fact that the AI should belongs to communities. But what I'm seeing right now is that the money is going to actually the AI gurus.

So my question is where should the money go and how to empower the communities because money is limited. Our resources are limited.

I went first before. You want to go first?

No, well, do you want last word?

Okay, that's fine. I can adapt. So it is a critical question. It's the how we make AI. And resources, in my opinion, need to go to empower communities, to skill building, to concepts like foundational models that pre-compute a lot of things universally that can be applied and adapted by local communities.

I truly believe, I strongly believe so much so, that I have invested in creating a nonprofit to make this help to make this happen. That resources should go to make AI open. Open source, open data, open for business, so that you can create businesses on top of that.

So not only big players with big budgets can do that. It takes a lot of resources to do that. So let's be smart. And let's work together as a community to make these models in the open. It's not a question if they are useful.

It's a question how to build it smartly. And that, to me, is empowering the community, building in the open, which I know we agree with.

We do agree on that. Obviously, the way donors clearly understand to help communities is to fund every proposal which proposes an AI-powered drone to deliver them a blockchain. As long as you make sure you get those three words in your proposal, then clearly you're gonna get funded.

So what I mean by that really is there's obviously power in machine learning AI models. And there's obviously things that humans can do to make use of those to improve their lives and improve their resilience.

So how can donors help that happen? Well, first of all, make sure that some, at least of the funding, goes to the community use of AI. That goes to the open source and the public-facing parts of it.

And look specifically, again, here's the litmus test. Don't ask whether the output of the model is publicly shared. Ask whether the model belongs to the community. And if as a donor community and a practitioner community, we're asking that question, who owns the model?

Then we're actually gonna be empowering communities.

weren't they good? Yeah? They were better than that. Come on. Yay. So I am surprised that Bruno gave Ivan the last word. You must be very confident. We find out, should you be confident? One more time.

We have 33 seconds left.

I think we're gonna win because... Hold on.

There's only three people, Ivan, don't get cocky. I'm not hacking the system. I'm not hacking the system. Bruna has a bot working out back somewhere. Come on humans. 6, 5, 4, 3, 2, 1, and we have a winner.

you

I think actually he got a little more...

Thank you.

All right. Eight. Thank you.

Can we go back to the other slide deck? Yeah, they really like each other.

Thank you. Thank you very much. Thank you for that. Wait a little bit. We have to take a picture to put that in GPT for the... Come on, come on, come on, come on. Yes. No, thank you. Thank you all. It was fantastic.

I want to say something to Bruno. We have been having keynotes on AI since 2018 in Mexico City. And the most important is we're not just talking about technology and innovation. We're bringing communities to be together and together, as you are here, working in solutions to help people.