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**SUMMARY KEYWORDS**

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00:20

much and today's talk is about the candidates and of course research because he you know his new technology but to do that to utilize biobank as we said then he develops his knowledge

01:03

today I want to talk about morphogenetic UTP on existing protein and sequencing buybacks.

01:24

is a platform to study association VCF files that are provided for my box with this VCF file contains a simple sort of syntax for Asians but there are also a row for genome sequencing data stored in Crown format. This role sequencing data contains much more information so, people usually use existing data and call up the existing data as the Detect subclasses of Asians lessons. So, this is this is considered as a loss of information from this data or this PCA file due to technical limitations for many consider to find causal states or maybe consider finding what kind of data causing disease in this included areas as possible, or most cases for example, if you just start ECFR Is there enough but I think, find causal variants we in data set for this. So, hi, I'm developing a software except missing this. For example, mobile emigration and virus variations and how we are integrating these days as a framework for statistical studies. And we are investigating, UK Biobank and all of us to first introduce mobile and mobile admins are the sequences in humans you know, the increase is copying. So, the case of recently active a few more boys they increase his copy number by copying and paste mechanism. For example, he has a mobile sequence and this is transcribed into RNA because transcript interceded and inserted into Insert me look into two minds about 45% of DeMartino mobile mobile app. But let's start with the sequences of old copies that are similar lists of some factions are the same the active is doing a few libraries a mobile and just this the AP assassin, way more seasoned, mobile, b2b caught mobile in the a's and b's. So when you look into our genome, for example, I will have some mobile COVID that have probably some of them are not physically about 25% are coming from mobile so these are considered as junk sequins or just limited or non coding DNA sequences functional activity because these mobile binding sites, these mobile elements and nearby Jesus books on se soda about 60% of female specific disciples so this is so start listening Yeah, active mobile a few months ago. So there are easy other means of classes or insurance. In other words, you know we have about 10,000 young puppies, about 20 to 25% of them

05:32

when it comes to disease, only this is one of the best papers in this case it was 05 844,000 exciting for us like PCR and ticker nucleases. This one person they found many of them are so this semester over in essence, these are important disease. This is a kind of small CSR needed valuation of five and that's why we started this project first need to fix up to 4 billion so we apply the buybacks and be the nicest people point of this study is precise, accurate discovery and human population scale. Well. This allowed us to integrate this framework of statistical techniques but conceptually, this is extraction of data from existing causes. There are there are many shopee sequencing data and buybacks and we can still use those in the different areas. So first, I'd like to explain how we get patients. There are two types of mobile innovation and this one is incisive no difference in instruction device access. So access is more than copy that are present in human effects, you know, ups and downs. So let me have this different success of the outset. These are the screwed up demand. So we are going to quit those days and quit those nice things discovered mobile essence more reasons to extract multiple features and simple statistical models to separate more information require.

07:51

As a good tip, I think obviously, this these need to five times a view. Yes. So this melt is a tool that I've previously published from Assam Singapore's and we'll do the same thing will be applied both males and minimum to the five dates. This y axis shows exactly so I've taken RPAC and you can see most of these some

08:36

of these arcades in the US the 80s sci fi Yeah, so yeah. Die because m&a is

08:56

a case of a case of net. So here is a bit more about Nina here. So this is a simplified version of what we're gonna pass the whole genome sequencing here of comfort and extract is gonna remap and we're going to talk about these two mobile discovers the outputs of the CFI recording is powered by human C++ is it's the driver water samples are the smartest metal plastics in other parts you can buy

09:49

in the case of waste we also need to cut down. So is this a good point of discovery is he understood the implications of this? So this is an example workflow. If you have a full genome sequencing data set for example, you have more data or you can use

10:23

five in these types idea So, for example, in Docker hub so you can download Docker container and us your SEC requirement and we can do a biopsy on ISIS since this was the visa preparation so the processes civil defense, human defenses and the so this is just pauses will compile for stencils on the underside was MC PCL five from these to make one single is our next I'd like to present what we found from the analysis or paradoxical so yes, TV never knew for him. We always find me by always got insight. So I have taken me after I've made on every project 2500 to 14 months

12:04

to teach you how to PCA news and nav sector continental structural active defense agency Martinez. You see my migration out of Africa. This kind of justifies the number of patient specific meds so this is how you can see a higher number or the business is a diverse, more diverse in the case of East Asians with a high number of Taiwan is the Japanese this is.

13:10

Another example we found

13:17

as you may know, there are two compartments in mind is a compartment so, this is taking place in the body apartment by using ice or water. Kind of maybe look into the with the sounds of increase in engagement sessions. And make these often without a heartbeat. This precise insertion of these four cells, these cells are split up from something to one millimeter scheme and counting the number of pieces and this is no fun. This is a higher number of Taiwan native Romanian This is opposite case. And what's interesting is I a domain but this time was not observed in Japanese. So it still is a difference in the distribution in Japanese basin. This main effect in the first difference

14:49

our next presenter so here we are ATPL ICCs MC. So to execute at about 800 subjects, US sequence

15:08

is from Smith era integrated in your business or in redefine them into the as the containment in this example in this case we have no privacy and in doing this, it makes good sense. And we also defined this as a neutral. So as a result, and ice so tonight is to talk about a whole bunch in CPS. And the first question we asked is whether in 50 years or more elements are found in CPS, single nucleotide variations because mobile anyone stays long sequence assessment. Tool sequence may contain a binding site and may have higher self delineating expression so we have here recently and you will find the case on ICS and found out more frequently in ptps

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communities may have to live nearby lesson. This is one example of how we found audio insertion of dislocation and dislocation and consolidate signatures

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is Jason gamified. And this lesson was found in the Middle East. This person was suddenly associated with decreased expression and so, is also the company has taken from his audience over over every sprint is going to be successful if interesting to them is finding a concert like signature isn't associated this narrative seems to be suggested in movies because

17:52

I think we are focused on a single thing Apple TV single time a day you use graph to find this same data and also find on this exchange this is a very amazing scientific purposes. For this is another example how you may be is engaged in expressing we found in 80s industry Pamelia and this was a natural thing but this is also space as a colleague and twinsies stability.

18:44

This is to the thesis, this thesis this session was associated with this decrease the expression

18:58

use the space MP found these arguments Another similar example is Moxie taping one zip family know Angela sociated with some of these things in many parts of the game. This This was not something other visits I didn't tell about this specific space. Thank you specific to find IUC events and RNA sequence and I have this idea. So what we really want to know no new association, so we see bass and biomass diseases at Paragon sanitize beauty easy to be found by this one sample skills are found after that is a really no these little side disclosures and this nine one came up I submitted all these names and established disclosures in this case this value is and these these are specific. So this is this is different. So these are 4% in this case and specific and these are also increasingly found is this value of Asian Pacific Islanders disease and this is caused by fibroblasts for Asia and it is already known that C importnat four is responsible for this as the name suggests the appeal this is the structure of networking. As form is so different from to a tee off there are five such diamonds assassin of this nature and because we know the sort of theory he followed this time on his oxygen so we did exam etc and ISIS so we formulated this example Antistick scientists time investment visits. So, as you can see, this morning session was not associated to the expression of this has been partly found from that increases based on this some of the support that this timeline is a function of time that it is theta tell you this I bought himself some time on this podcast. And because it seems like back then it might not seem good. makes up the expression of his voice. So as we move on can see up until this landmark decrease, basin of exports, also known as soft ice. And then you see that for us them to grow as more basil decreased expression of short so his time on social functionality enhancer. Please don't assume it so as you see the preface of the answer, for example nine also this suggests that this may be a photo have one proposal this one or this is also associated with these different diseases. For example, it seems to be the result of some statistics. This

24:08

is something we developed because some people may have tried to diversify. See the Global's. We also need statistical metrics are defined by

24:35

the analysis of existing causal sequences or previously existing data we can still have of course. So, this is more of a pain type of virus. So these things here called or viruses or do you have a socket viruses are spreading media via sequencer to pick up the sequence, so this is the likely 99 nicely so that there are some people out this five six is how film and music. So this is this you can see that virus rising they found these focus 516 in this space screen if that's the same sequence or the same position. So this is indicating sequence for some people contents or sequence without a few months in a double file syntax and study has done what is thinkable prophesied this is a double secret so steroids can you name your older somatic cells have this virus sounds a little bit it's natural to immerse in the file see things cause. So we started to investigate the association between these viral double virus effects. So is this built by box yes this sequence is not the first few months. So viral genome sequencing is

27:09

inspired sequence is thought as an extract, necrosis, the violence and we apply this pipeline to all of us and we have the conversation. These are all of us processes. So this is, I suppose, buybacks. So in the case of UK Biobank, for instance sequencing data, we can directly access the sequencing from CPU it's good when the appropriate reason resources. So there is no cost to access the data. If we have access to the data, we can analyze it. So the key is that all of us, it seems that there are different ways to transfer this crowd file to the Museum of space, and we found contrast quality bond potency with little more comfort 20 cents, and there are more than 200,000 Posting sequencing data and I don't have the funds it is impossible to transfer over. But we found that transferring all these monthlies is much much cheaper and doable. So, if we start of course, so, we started the task is analyze this piece of all of us channel access for expense so we need to go with the United States this high hurdle. So, this is the first day of state so I became postal same as the United States. So far, you see the prevalence of this data will exceed 16 in diverse populations. So this is all of us data etc. And it is known that you Central New York. How the

29:55

disease is I don't know what is the uses for that. The 60s valuable strategies are supposed to be so these people are the ones

30:15

in sixth and not. We can get this up as we use in these instances is associated with disease is this is a whole story. And there are still missing variants for over the original count by always sequencing data in Firefox, for example. We can still find, for example, people's opinions of the citizens isn't seen as divisiveness. We can come in vice.

31:31

Versa inbox from Japan. Any questions?

31:48

One of your slides with fathers that you suppose they are from nothing because all of us are Japanese. Much more often than Japanese. And the results that found many are mobile elements in the Japanese population.

32:17

67 Yes superb. Is is that because you just analyze more Japanese subjects or is that actually, if that's a result that's

32:39

not I think this is done nicely for us. In the number of participants it's almost seven. So yes, it prints for example, Japanese may be 100 400 So it's there's no defensive

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the evolution theory tells us that if we find something in the genome or money says it's there for a reason. And so just your personal opinion like not nothing research related why do we see this there must be some

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there must be something there will be two possibilities one is the mobile is Japanese may have higher number of copies contact the other person and the possibility is that something may come so.

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I have a two question. One is how long it is and how long is mutation mobile. So, in the case of mobile payment for insertion around mutation of around

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how the size of the cancer center is about 66 ounces. Is it wrong? Yes it is. In terms of distribution. More Roman MeV has a distribution ranks long

34:38

etc. On the face there are this vapt of

34:46

classes but there's also my mobile payments for the day and this is about 90 events. This they have some of these but this is not in the same

35:05

time some of you say that may be counting caused upregulated and downregulated suppression and I My question is do the effects on gene expression regulation vary depending on whether and we leave this moving differently things. So MLB is contextual, the duration and it's where the degrees in different visual

35:45

ya scheme data, rotational influence of data. This is a good point and we associate the rotation of mobile insertions and association spacing and mobile Ms. open chromatin

36:14

depends on where to where to move

36:19

in is easy the machine that will elements that are close to a higher indifference or expression in those regions with the open commodity. On the other hand, these opportunities Yes, not often, because there's a trend but it depends on each company

36:56

thank you for the very nice presentation. I could talk about these things with you forever without because maybe Maybe you can show again the slide number two I thought that was a beautiful slide to explain some of the things we tried to achieve, I think making the data available on various volume tags and I felt many of these analyses showed were really excellent in highlighting facilitate new discovery. Thank you very much for that. And for the example that I showed him some time ago, we also have a summary for that. So I mean one thing the fact that we ended up focusing on a similar example maybe says that there's not so many of those right away because we ended up highlighting some of the same one is, in a way, maybe shows that it's not so so strongly. One more question to ask is whether you've looked to see the frequency of polymorphism and whether there was an impact on rare versus common Indies in terms of the strength of the effects observed.

38:14

Think of them as loving the first one. Yes. immunity is extremely important disease. Or complex trait the fear of death variation and is because the novel materials are seen as a proportion of startup associated with disease or an expression for it, the same ratio of demand is not complete. So the

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second point is the frequency things are difficult. Compare like apples to apples because it is really hard to take a low p value so it's really difficult to observe it

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tend to have higher excises same set of

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common relative to all of us, because I think they're gradually opening for international analysis as well. I know that from Canada, we're able to now request access and I don't know it from your mind as well at some point isn't it must be nice to go there. To do the analysis but maybe a bit complicated.

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It's really complicated. And yes, we need to do the things I thought it's impossible to access it's exposing secrets. Secrets. So

40:19

they have pants today

40:28

thank you very much. It's very, very interesting to have one question about the polymorphism. We understand very well that there are some insertion traditional copyable whatever you go for movies, in the mobile element and shows that obviously there is some active jumping into different parts of the genome in different individuals in the germline. When you look at some of the active elements inserted into different parts of different individual, then what about sort of the genetic variation when you compare these different copy of different you have given parts of the genome or being the individual because the mutation must take place when the element was reverse transcribed. So mutation rates can be very high as compared to sort of regular rate of mutation in in JAMA. So to have some data about that.

41:47

Unfortunately, I don't have such a using nobody's secrets, we can say is it's copies originated from the top and their main things. No example mobile emergency fix some of the most cases, mobile is now booking a new copy sequences, similar or exactly the same in most cases, but it often had additional sequence, three time starting sequence by seeing that we can face which copies so is some people who are using normally quite a long way probably decide what kind of coating is more upscale for that but I have about three years on both of these things. This nice sofa

43:00

this is exactly what I wanted. Thank you question from zoom.

43:12

Thank you so much.

43:19

I like to introduce the last speaker of today's today's show

43:28

from the University of Hong Kong, so I