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let's take a look at how experimentation can turn into personalization so the most traditional approach I think most of you are familiar with is is actually a B testing so you run a test here in this case there are four different variations you wanna see which one is the best performing one you run it and maybe two weeks later you find out oh variation d is the best performing on and that's the one you serve there's a newer approach which is which is called multi armed banded I really don't like the word bend it because it sounds like you want to steal something but that kind of research comes out of slot machines in the 70s so this is why the name still stuck around and with multi umbend it's it actually learns throughout the experiment which variations are performing better than others and then it's taking these learnings and it's um kind of dynamically allocating the traffic to the ones it's thinking are the best performing ones and here you can see that it learns quickly that the de variation is the best performing one and what you hear are actually mitigating is regret this time here between start and finish off of the experiments is called regret because a B and C are not as good as the others so why are you serving them right and here you learn this mother quickly so you can regret this but for but for truly personalized design you need something what is built on top of the multi arm banded technology which is called a contextual bandit um which has feature and context vectors on top which are fancy names for um the user and the kind of attributes of a user and the state of which the user is actually in state could be some could be like previous behavior and all of that you're adding to this technology to in real time learn what is the best performing variation for each individual customer and you don't necessarily end up with one winning with one winning variation

but you can up with multiple winning variations
here you can see this hypothetical example
that the d variation is the best performing one
but only for I guess 60% of the audience
so why not
serve the other 40% of the audience
with the best performing variation
or the best fitting variation for them
just to explain that
I should have done this in the beginning
this is the time excess here on X
and the y
excess is the percentage of traffic being served
to the audience
let me try to visualize the Contextual Bandit
in a more simplified way
so we have got on the left side
I generate design variations using in this case
our deluxe technology and then the Contextual Bandit
to find out what is the best match between these
and then you've got the feedback loop
where you learn if that actually is something
what you should continue to serve or not
because
we also want to make sure that personalization engines
don't put you in the bubble
where you cannot get out anymore
do you know the feeling that if I know this
if I click this thing here
I'm going to be surf this
this kind of ad forever and you're like
I want click this like
which is really terrible
and not the kind of personalization we looking for
you have to continuously
it's called explore and explored
explored sounds childhood again
but that's the kind of terminology
which is used in machine learning here
you have to continuously explore and exploit
the learnings so in the contextual Bendit setup
for instance um
it's very common that
10% of the audience get a random variation
while 90% are being exploited on the learning switch
have happened before and then you continue the loop
when you talk about AI we have to talk about ethics
right so we
we wanna make sure that that we are building um
artificial technology

which is aligned with our ethical values itself
first we have got um
something while we are using a workshop um
which is being put together by dot everyone
the company in the UK
which is called consequence Scanning
it's a really cool exercise
so what you do is
you are trying to answer three questions
what are the intended and the
and the unintended consequences
what are the positive ones you wanna focus on
and what are the negative ones you wanna mitigate
and then you get this nice um
quadrant where you can kind of do your brainstorming on
and then really see
what kind of things you have to look out for
and if the positive ones are actually the ones you
you are planning for with this kind of application
um so yeah
I definitely encourage you to take a look at this link
and try this out it's a really cool workshop
and it's a good exercise for product development
in general it doesn't have to necessarily include AI
from my point of view
how this applies to design generation
or design automation if you will
I wanna draw here like a little metaphor to
um
the levels of driving automation
I think
everybody of you is aware that there are more and more
self driving cars out there
but they are not all here just yet right
so you could say that the bigger companies are like
between two and three you know
you're still you must still need to be there
have the wheel whenever necessary
and you cannot start reading a book
while sitting in the car and driving just yet
and I think it's similar
when we are talking about design automation right
it's not that we wanna automate designers out of a job
the goal here is ready to help designers by um
through
through the automation of tedious and repetitive tests
um so that we can free up other time
for more interesting work
if you will so from my point of view
we are currently in this metaphor at like level 2

where we are seeing
where we are going to start to see the
the automation of some tedious and repetitive
junior designer and also develop ourselves right
because what's being generated
is also coded automatically
and in the future we might see the Level 3
where some automation of tedious and repetitive
more senior designer development has
and I'm really curious to talk about this more um
later today what's your point of views on this
my perspective is that the amount of work
and the kind of service area
designers have to do with today
keeps keeps actually increasing right
there are so many channels
and there will be new channels coming up
and I think the only way
how we can keep up is by starting to actually automate
one of the more repetitive things
and focus on the new um more complex areas
the other thing we're using to mitigate
potentially negative consequences
is that we keep the human in the loop
so simple simple illustration
we've got a design as a design AI
which is generating variations and then the user
which could be for instance
like a marketing specialist and picks the
picks the best variations
for the personalization engine
and might be that none of these are good
and you go back to manual design
which is also okay right
but
we wanna make sure that we keep the human in the loop
and the personalization engine
predicts for the customer
using a contextual bundle
for instance the top prediction
and then specific loop continues here
and you learn something so you start to like
actually iterate on the design variations
and the feedback loop
doesn't necessarily have to be only implicit
which is working with like instrumentation of data
but it can also be it can also be explicit
which means sometimes it's easiest to ask the user
when to want like
what should this look like or was this helpful

you see a lot of like thumbs up
thumbs down when you see something like
also make sure that that
you do include the end customer as part of that loop
where applicable
all of that we are
um currently at Salesforce productizing
um as part of Ancient Designer
followed by Deep Learning ex
and we are currently working with a Marketing Club team
just got announced last month
to help with a feature called Ed Sheeran
Content Selection
which is already doing personalization
but this is taking on the kind of
automation of the variations
you need for personalization
a lot of Asian
um
this one here I didn't plan to put into my deck
but but based on the conversation we had earlier
I thought I put it in just as a provocation to so
democratization of design I said it
in this case what democratization of design means today
the workflow is that you have in the B2C space again
marketing specialist
collaborating with creative designers
and the back and forth between kind of like
giving the brief
or what the marketing campaign is about
and like receiving the assets
you then need to kind of launch your campaign
is a process which
which easily takes days and weeks
and with this like automation of for instance banners
we can a turn this process down
like cut it down from days and weeks down to minutes
but also start your marketing
and actually enable the marketing specialist
to do some of those lightweight design work
in the more in a more autonomous way
and then have the creative designers
free them up to think more about the higher level
brand thinking and not cranking out banners
so
let me please summarize what I was talking about today
so we believe that with personalized design
we can build relationships by design
all times intended um
the two pieces to personalized design at scale are

generated design
where we automating the to use repetitive tasks
and that we can start to generate variations
for experimentation which turns into personalization
and on the experimentation site
to start doing more data driven design
and take some of that
subjectiveness out of the creative process
and also had to find your story with a customer
also kind of reduce the back seat designing
some of you might have experienced also
like some people like
I really think we should do it this way
and like maybe let us have the data answer
what is the right thing to do here and um
be less reliant on our intuition
so yeah
no more one size fits all for for the experience layer
I think we are just scratching the surface
and
I think our thinking is going to develop significantly
if we move forward here
and but I truly believe that personalization and
can then lead to more meaningful
and bespoke experience
which can delight every customer
thank you