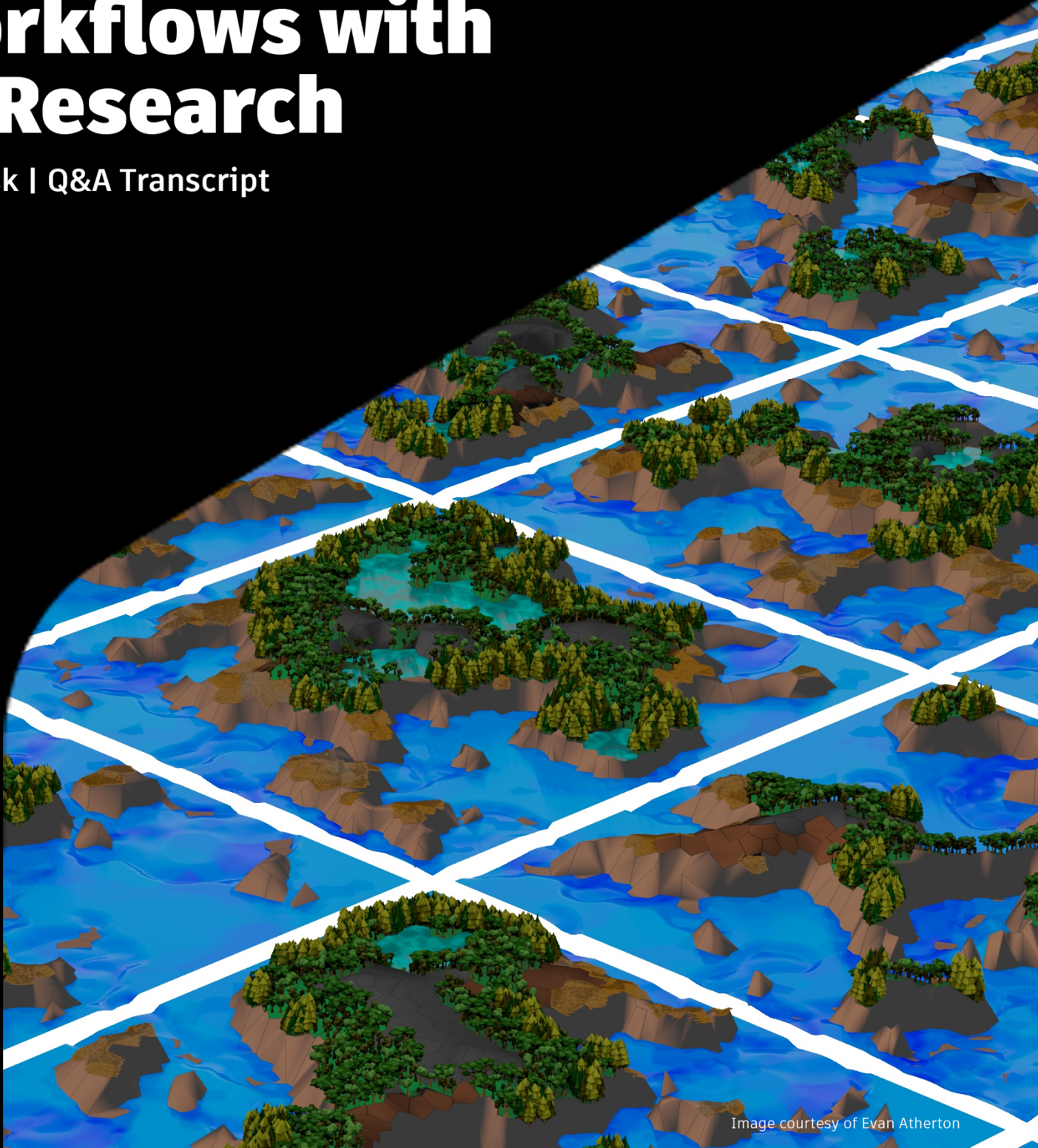


Autodesk Vision Series 2024

Augmenting Creative Workflows with AI Research

Autodesk | Q&A Transcript



Augmenting Creative Workflows with AI Research

AI is changing the game. Journey into the future of media and entertainment alongside Hilmar Koch, Autodesk Research Director for M&E Industry Futures. Gain insights into Autodesk AI's creative process and artist-first stance and get a look at current Autodesk Research projects focused on AI's thoughtful, responsible development to address your needs and enable new and better ways of designing and making.

Watch the recording

Q&A with

Hilmar Koch, Research Director for M&E Industry Futures at Autodesk

Audience Member 1:

Something I've been curious about with many of these AI improvements is: For every company like Autodesk that's creating AI with guardrails, that's making it for the artists, there are five companies that are just intent on disrupting the industry, getting rid of the artists, no guardrails necessary. Where do you see the future going in terms of that competition? Is it horses versus cars or horses away or is it more like Uber which just recreated what we already have?

Hilmar Koch, Autodesk:

We have a limited amount of control over whether regulatory systems will come into place, but we, at Autodesk, believe the right thing for us to do is behave in a way that is ethically sound. We want to set an example for how to build AI workflows in a way that benefits creators and the industry as well. I don't know how we're going to match up against the competition, but the question of AI without guardrails does keep me up at night.

Audience Member 2:

Is the Neural Motion Control being designed with thoughts in mind about how it can integrate into more complex completed scenes already? If you were to put rocks or something, for example, and have those pathfinding systems in the Neural Motion Control.

Hilmar Koch:

Absolutely yes! But it gets super complicated right away. If you're considering multiple actors and having them interact, right then the planning of your action becomes more difficult. That's an area that AI is not that strong yet. So, I suspect we're going to be much more active in understanding how users can then really control a process like that when we take it further beyond the current locomotion and simple behavior capabilities.

Audience Member 3:

Regarding physically bound systems, can you talk about whether there's a thought to being able to close the loop on the user side? For example, providing a channel for custom simulations so you can create generative systems and then test that for a user-defined physically based system?

Hilmar Koch:

Yes, this is one of my favorite subjects! I spent most of my career in a strictly linear pipeline. You get your artwork, you realize it in graphics, and then you start over because

you receive a new note. So, what you're speaking to is the ability to have a canvas where ideas influence one another. Maybe you find a walk cycle first and you build a world around that. I believe as a research hypothesis that these linear pipelines are going to be leapfrogged by something more akin to a canvas of ideation that connects different ideas and allows different levels of controls to interact with them. At the moment, this may sound like science fiction, but I find it thrilling to just even think about. Our human computer interaction group has some really good thoughts on that, and it is the next discipline down from pure science that will shape the entire Autodesk of the future.

Audience Member 4:

Will it be possible to train models on our own data?

Hilmar Koch:

Yes, it will be possible to train your own models if you have data yourself. That's our ambition and it is what we built in research. However, we have to consider how business models have to evolve to support this. There are related questions we are thinking through in service of it: Who owns the model after you trained it? How do we get compensated for it? Neural Motion Control is leading the way in us considering the options.

Audience Member 5:

For students who want to start learning about Maya, Autodesk, and the world of automation, how do you think this advancement in AI will change the way students learn animation? How do you study this craft in the future with AI coming?

Hilmar Koch:

I can't answer that really because I don't have a crystal ball, but I'll leave you with a comment from one of our top AI research scientists. She says, "I'm a machine learning specialist. I can train a model for you. I have no idea how you're going to apply it." That suggests to me that students' active engagement with the technology, even on the academic level, is very important and as a follow-on effect, curricula will change as well.

Audience Member 6:

What has been done on your side to apply the AI you're working on in manufacturing? Can we expect something will be integrated in the future?

Hilmar Koch:

There are multiple challenges here in that yes, the data exchange between the different tools and the different requirements for different industries has to happen for an integrated data model and a complete system of pipelining, but also us learning about how these different technologies work together. AI is of course taking up a lot of the news cycles these days, but we're still actively working on better data models and

integration of our services. The Autodesk Platform is one way we're doing this and is being worked on very actively.

Allow me to mention one related item: Recently, we've had a machine learning breakthrough for data representation in manufacturing. That breakthrough is now feeding an idea that we might apply to meshes and UV layouts. That's just one example of how machine learning scientists can produce models that are theoretically purposeful in other areas that they weren't originally intended for.



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