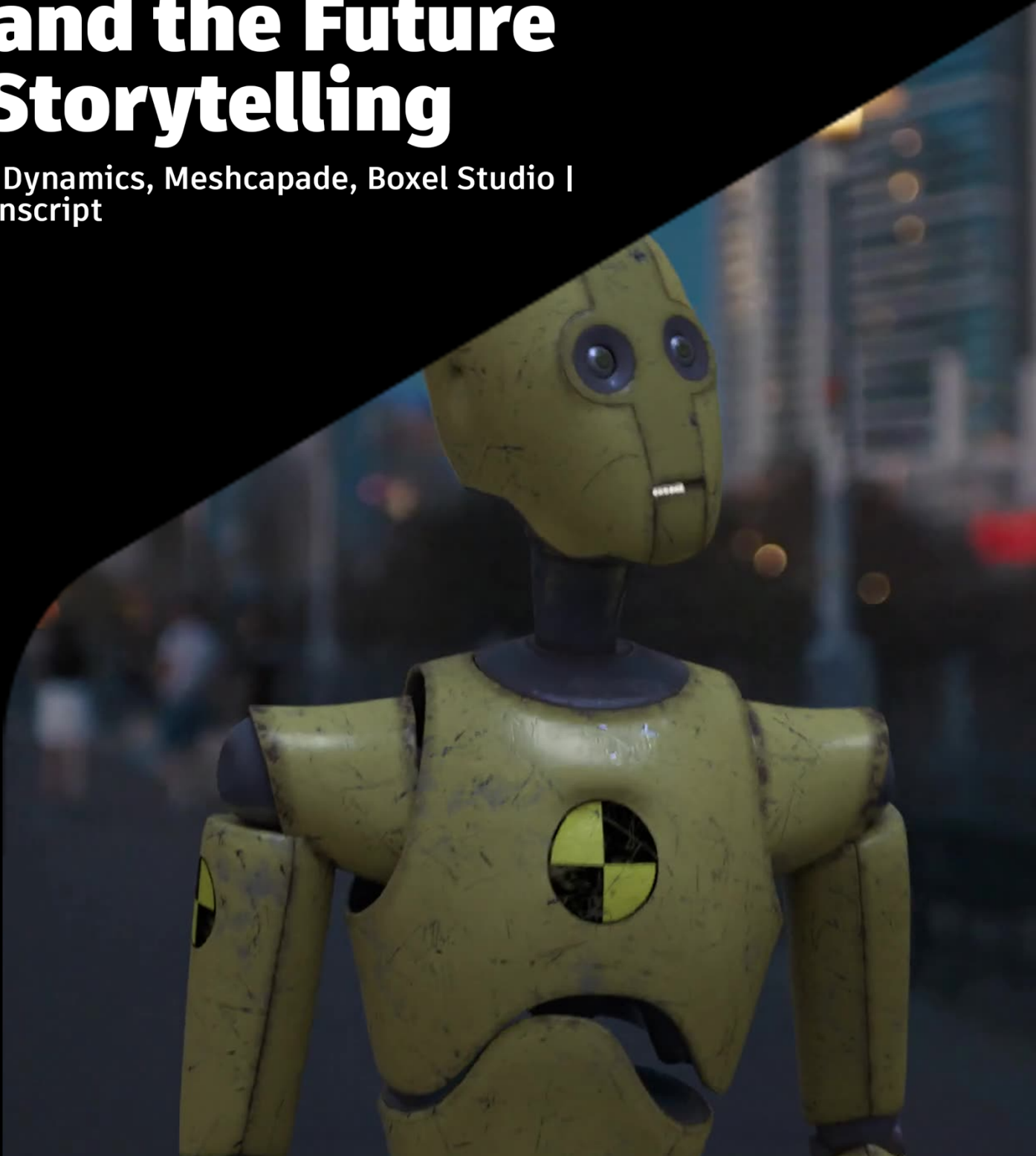


Autodesk Vision Series 2024

Panel: AI and the Future of Storytelling

Wonder Dynamics, Meshcapade, Boxel Studio |
Q&A Transcript



Panel: AI and the Future of Storytelling

Join Nikola Todorovic, the Co-Founder of Wonder Dynamics, an Autodesk company, as he leads a panel discussion on how AI is shaping the future of filmmaking and pushing the boundaries of storytelling in media and entertainment. He is joined by Michael Black, Max Planck Managing Director and Chief Scientist at Meshcapade, and Freddy Chávez Olmos, Creative Director for AI and Innovation at Boxel Studio.

Q&A with

- **Nikola Todorovic, Co-Founder, Wonder Dynamics, an Autodesk company**
- **Michael Black, Managing Director, Max Planck Institute for Intelligent Systems, Chief Scientist at Meshcapade**
- **Freddy Chávez Olmos, Creative Director for AI and Innovation, Boxel Studio**

Audience Member 1:

So, I want to continue on the topic of what happens to people, and all the practitioners and artists on this and just explore it because I'm struck by how much AI is now part of SIGGRAPH this year. And yes, these tools always allow for new innovations and such, but this feels fundamentally different. So, I was at ILM when Phil had that revelation and thought his career was over because stop motion was going away, and it didn't. And we transformed one methodology to another, analog and optical, but it created more positions, not less, and the challenge with moving folks over, some who could and some who couldn't. But this seems like this destroys the economic model for all of those intermediate roles. I'm an assistant artist and I learn how to be better at this than I'm an animator and eventually I get to be in the position to make those really good movies that people want to watch. I'm not sure I see that here in our field and frankly all the fields that AI is impacting. So, I'm just curious a little more of what you see and what our responsibility is to try to figure this out for society and how we're going to continue to function if there isn't an economic model that pays for every single person to be a director.

Nikola Todorovic, Wonder Dynamics, an Autodesk company:

Right. No, that's a good question. And I think we approached it from a standpoint of being in a film industry. So we purposely started with CG characters that don't exist in real world. We didn't want to build with humans because I do think you have a certain responsibility when you're building this. My solution is to build it inside of the industry. Then you're going to build it with people that understand those jobs and those positions being changed. But I guess there's a short term and long term. Short term is going to be challenging. I mean there's going to be an existential crisis in a lot of industries, not just the film industry, service industry, self-driving cars. There's going to be a lot of shifts in jobs and you can't deny this. I do think in the long term the market will expand. So it's not everybody being a director. I think we're going to discover some new forms of work just like we did with every new shift, let's say digital cameras. Digital cameras came to be. The

film industry didn't really respond positively to it. It was initially like this is not real filmmaking, film camera is the only thing that's good. But then everybody started using it. Now you have a lot of new roles, DIT and other new roles on set that are wrangling this data. That's a cause of a digital change. I do think that's going to happen with AI, but I do think we have to look at it at the global scale because there's a big sacrifice in every project we're making. I think we're going to be pushing projects more. Take a look at it this way, you write something on page, very hard to write, but it doesn't cost you anything to write it on a page. You always have to tone back based on your budget that you have. And that's where I think it's going to happen. We're going to see more direct relation between the page to the screen. The way I predict it is studios are just going to go up and create bigger things, but we're going to see this new wave of indie filmmakers that are making content that they traditionally cannot because indie filmmakers usually can't do VFX, they can't do CG, they can't even afford green screen a lot of times. I see this shift in category departments. And then the other thing is the need for content and storytelling is greater than ever. And the millions of hours being uploaded on YouTube and social media, that's going to be for me the layer that's going to be demanding a lot of new tools as well to be creative. So, to me, it's going to be a challenge short term, it is going to be a shift. People will have to adapt, but in the long term, I think it's a positive shift. It's just going to enable a bigger group of people. I don't think storytelling should be tied to socioeconomic status. It is right now, unfortunately, it is very expensive to make these films. So, I think these kinds of technologies, they appear because of a need. There's a need to cut down on the costs of making these films because right now it's a little bit gatekept, it's a select group of people that can do it.

Audience Member 2:

On the creative side, a lot of the text to video models, the big foundation video models right now, must be trained on what came before - probably illegally sucking up all the film in the last century. But that's good if you want to be able to replicate a dolly shot and say, oh, I want to be able to pan to the right, that kind of language is good, but Michael, if we're going to be moving into these new genres like you're talking about, how do we move past with a model that's trained exclusively on the past, how do we create new camera movements, new ways of interacting with the film? It's not like it's going to generate them for us.

Michael Black, Max Planck Institute for Intelligent Systems, Meshcapade:

Yeah, it's a great question. One of the things we do at Meshcapade is, it's actually a new way of filmmaking in a sense. We're constantly generating synthetic data. We have synthetic actors and scenes, and we generate synthetic data. We rely super heavily on this because then you don't have the copyright issues, and you also don't have the privacy issues. And in Europe, the GDPR privacy issues. And we're using traditional graphics for that today. We're doing a ton of traditional graphics to train AIs to go beyond, that's not enough. You must see real world data and getting that appropriately is getting harder and harder. It's getting locked down more and more - as it probably should be. But what's emerging is a new market, companies like Getty and Shutterstock, I think they saw their business, and thought they were done, right? Generative AI came along, but they've realized, oh wait a second, there's an entire business here. There's a good business selling data they have rights to. And so, I think that will increase the pressures for high quality, real data. It's probably a growing business for the next little while.

Nikola Todorovic:

And I agree with you. I think we spend a lot of time on synthetic data and building tools inside of the company to help us produce that type of data easier. Same with existing DCCs. When we first started, we saw a problem, especially in mocap, a lot of the data is for gaming industries. The cameras are from the top. It's always the same angle. You don't really have the film language, which is like, I'm going to go wide shot and I'm going to push into the closeup. So, that was something we were missing and that's why we went into study data. Then you have full control. And what I think is going to happen once these generative models for 3D space become really good. For instance, if you go character creation, environment creation, once you get that photorealism, then you can start tweaking your camera movement, your animation, etc., use some other gen AI tools to tweak your synthetic data, which will give you more data to produce. I'm a big believer in synthetic data, long term, so we really avoid the issue of using someone else's art to create new art.

Michael Black:

We see it as a flywheel. So, as we get a little bit of real data and that expands our understanding of the 3D world and humans interacting with it, we use that to drive the synthetic pipeline. We generate tons more like that, then we find where it fails and then

we gather a little bit of data like that from the real world and we drive this again and again. And I think eventually, while we're using classical graphics today as training, I think we'll probably move to a more generative approach in the future.

Audience Member 3:

Great panel by the way. As more companies, more studios, adopt generative AI to their pipelines, do you feel there's an onus for the studios to be transparent about the use of AI? Do you feel that when we see more films that include generative AI that would see something in credits about transparency, like "This scene was built using AI". I know we don't really do that with what software is being used. We have people's names. But do you think in terms of credits and transparency, we'll see a change in that?

Michael Black:

Yeah, it's a really interesting question. At some point, maybe you do have to credit the AI itself, right? If it's playing an important role in the process. So, we might credit the human, we might credit the AI.

Nikola Todorovic:

Social media is going to set a standard a little bit. I do think these tools will start first with social media, then commercial, then music videos, then go into movie studios. That's the kind of adoption we've seen in the past with new technologies. Commercials tend to risk it more, I can see it already in car commercials, probably one of the first ones that will implement some of this. I do think some of the Twitter (X) policies and others might set up a standard that will be followed across other platforms. But I do think a lot of these companies are making video tools to target social media users because that's where the money is, because you have billions of users across the planet versus the film industry which is relatively very small compared to that. So that's one thing they'll try to control. I don't know if you'll be able to control it too much because it's such a global thing to try to get regulations around. So, I do think we'll see different regulations between what commercial products like films can do versus what you can do to post online.

Michael Black:

I think this is quite different from deep fakes because when we go to watch a movie, we know it's fake. And as a viewer, I don't care what software tools we used behind the scenes to make it, I understand that it's not real. I mean maybe there's a disclaimer that it's fictitious and it doesn't represent any real people, and we already have that disclaimer.

Freddy Chávez Olmos, Boxel Studio:

I've seen that already being disclosed and especially on documentaries on Netflix. I think whenever they use an image that is being generated, they disclose that. And I saw a documentary they did where they changed their lip syncing as well and they disclosed that also with some captions. I think the more you can disclose that and be clear, the less you're going to get backlash.

Audience Member 4:

I wanted to add that TikTok has a made with AI button, it's integrated. So, I'm curious, and Freddy, and maybe you can speak to a little bit more about the work that you do in terms of new types of stories, new types of creations coming out of the ecosystem of those experimenting with generative AI tools. Because I'm seeing a lot of it, I'm involved in doing it and I'm seeing some amazing things that are not traditional structures. They're not about simulating past structures of storytelling. So, I'm wondering if you could speak to that.

Freddy Chávez Olmos:

Yeah, I think we've been approaching this is out of necessity. There was an exercise, something I'm going to showcase later today. I did a film, but they only gave me two hours in a video production stage to do it. And because I didn't have enough time on the production stage to do the makeup effects, I had to approach it with some of the tools that I had for machine learning and AI and that allowed me to complete my shot list on time and be able to deal with that later instead of being on set just focused on the makeup or the stuff that I couldn't achieve because of the time constraint that I had. So, I think that's why I've been approaching it this way, even in a production show. We just did a talk yesterday about "Superman & Lois" and where we used Wonder Studio in a big way for motion capture because they gave us less time and less budget for the new

season. So out of necessity, we had to find a way to make it happen with less resources. I think that's how I see it right now.

Audience Member 5:

Hello. First of all, amazing talk and Nikola congratulations with Wonder Dynamics because when I saw it last year I was like, this is amazing. So I tried it from day one. I was doing six years of VFX and animation, even wrote a short film and AI actually impacted me. I left to join an amazing startup called Griptape. So right now, we're trying to figure out different ways that we can support artists with AI. So I think I agree with most of the stuff that we covered today, but there's one thing, because I've been doing digital art for almost 16 years and then I stopped. Now I'm kind of doing some AI stuff and then the other day I went back to do some texture painting and I'm like, oh my God, this is amazing. We are forgetting that an artist doesn't only enjoy the final output, but it's the journey. It's the fact you're using your own creativity, painting the textures and that stuff. And I don't really hear people talking about the journey - that it's disappearing.

Nikola Todorovic:

That's a great point, but I do think the goalpost of the journey is going to change. So right now you have a journey to achieve what you call a final shot, but if you ask someone a hundred years ago - you look at something, you're like, this doesn't look so great. So I think we cannot predict what that next level we want to get to will look like. So I think AI will get you to a certain point, but it's our human nature to try to push it. So we will do the process, it's just that the goal will switch, if that makes sense, right? So right now, you have a certain process to get to that, but I think the misconception for generative AI is that you will just get you something and you're going to be completely happy with it. It's not going to happen. That iterative process on top of that will get you to push it more. There's always going to be limitations. And I think that's where the art really comes from, that creative kind of process at the very end, which to me is the most important. And then also you won't be able to duplicate, and I see this with our engineers, you can be the best engineer in the world ready to solve really heavy research problems, but you do not have an eye when something looks good or doesn't look good. That's that artist's eye they really need to push certain tools forward. So I do think we're in this scary time where you're wondering what's going to happen to artists and art, but I do think we will see the

limitations and it's going to be our instinct: How do we push it more? And that's where the process starts.

Michael Black:

There's one aspect of generative AI that we haven't really talked about. We've been thinking about text to image or text to video. But people here should think about what they do in their current processes and think, well how is generative AI going to help me do my thing better and go further? So, there's nothing wrong with traditional computer graphics. It works great, it's just very labor intensive. It's too expensive to do and so on. So, we've been working on using generative AI to accelerate that. For example, creating hair grooms, I don't know how to do it. It's labor intensive, but we have a generative AI approach that you describe what kind of hair you want, and you get a groom out and it's a great starting point for what you might want. So, it's not like generative AI has to completely replace all the processes we're used to. It can accelerate and fuel more creativity.

Nikola Todorovic:

And I think that's when it's done correctly. Let it help you with that kind of boring part of the process that you've done a million times. It doesn't really challenge your creativity. I've been on so many VFX projects where I've done the same thing over and over before I even got to ask like “Do I have a creative input here or what's the creative decision here?” So that's what I think AI should do. That's how we build Wonder Studio. Let me help you with this stuff that you've done a lot and then you have a good base to start off of. I don't think that's going to change.

Audience Member 6:

Kind of a follow up with that. I'm in education and I'm teaching a lot of the artists and animators how to do their foundations and I've been worried that AI is going to replace a lot of those foundational skills. So, I guess it's a two-part question. One is, if it does replace it, what would you recommend students start learning to prepare so they can get jobs because they feel like AI might replace a lot of the junior positions, and so how can they best compensate? Because I worry that if they don't learn the foundations, they're not going to develop that eye of what looks good and what's not. As you just mentioned.

Nikola Todorovic:

I agree with that. I think we're going to see a combo of general AI and existing DCCs. I think that combination of control and stuff, I wouldn't change that approach. If I was talking to a student, I would say learn all the new tools but learn the foundational things. It's not even computer graphics and knowing how to use the 3D software. It's foundational film language or understanding film language, understanding what you need to have, how to communicate that juxtaposition between each shot. There's art to it and that's what people on set, or in film school learn. They learn what it means when you combine three shots and there's millions of ways you can cut three shots to get a different sequence. That's something that you need to learn and have an eye for. Otherwise, these tools, you're going to use really basically. And then everybody's going to use it. As you say, it's not going to be great content. Just like YouTube, right? There are millions of hours of YouTube uploaded daily, but a lot of stuff on YouTube is poor quality, right?

Michael Black:

I can give a little counterpoint to this because I mentor and teach a lot of students in computer vision and what I consider core foundational things they had to know, most of them don't know it now, and they're very productive and doing different things. The foundations shift over time.

Freddy Chávez Olmos:

Recently I had an intern at Boxel Studio and he just came out of school and we took him on for six months because he wanted to learn more about the industry. And something interesting was that, in that conversation with the Director of New Technologies at Boxel, we both decided to mentor this guy and see what we can do for him. And in six months, not only did he transfer his traditional skills that he learned in school, but we enhanced them with some of the real time engine and some of the stuff I know about generative AI or machine learning. I told the Director of New Technologies, this is something that I didn't know when I came out of school and I would recognize him as a mid-level artist, not a junior anymore. And I think that's what's going to happen. And this is just more embracing and not only learning traditional skills, but also how can they know all the other stuff that's coming out.



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