IM4 LAB IS OPENING DOORS IN VIRTUAL PRODUCTION

FOR THE INDIGENOUS FILMMAKING COMMUNITY

"You can go anywhere with your imagination when you're working in motion capture, working with Vicon, working with LED screens. That's what's really exciting," says Loretta Sarah Todd, Creative Director at IM4 Lab.

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Carlos Vilchis, Virtual Production Educator & Consultant / Unreal Authorized Instructor

Indigenous Matriarchs 4 (IM4) Lab is dedicated to helping Canada's Indigenous community tell stories using leading-edge tools and techniques. The organization offers training in immersive media production, offering Native artists the tools they need to deliver innovative storytelling through an Indigenous lens.

"We've been having these discussions about indigenizing technology for a long time. It goes way back to when I started making films," says Todd. "There was always this sense that storytelling is really important and these are new tools that we can use and we can indigenize. We were talking about virtual reality, back in the day.

"Fast forward, and when Canada was celebrating its 150th birthday, virtual reality projects from different Indigenous storytellers and filmmakers were being commissioned. They were all really good and they were all significant. But I was thinking, OK, here we go again. We're going to have technology that's going to be out there in the world, but we as Indigenous people won't have ready access to it, unless we're commissioned or unless somehow there's something to initiate this.

"What was really important for me was to be out there at the beginning with VR and AR, but also real-time virtual production because that was just starting to come in. The more of us who have these skills, the more we show ourselves as equal in those spaces and, in fact, maybe we have something special to bring."

BUILDING CAPACITY

IM4 Lab was established in 2019 to make access to these skills free and inclusive to the Indigenous community. The organization has a governance structure that is made up of matriarchs: "The idea was that I didn't want to just replicate the way the industry works.

I wanted to model a more Indigenous way of how we go about doing our business," says Todd.

The structure of the grant that IM4 Lab needed to fund its virtual production project made it necessary to partner with Emily Carr University of Art & Design (ECUAD) in Vancouver and the University of Victoria, which were able to support IM4 Lab with the resources and facilities the project needed.

The cohort included 24 creators from a variety of professional and creative backgrounds. It lasted 12 weeks, blending online and in-person learning as attendees worked to create a short film.

Motion capture was a key part of the project, with the creators using a legacy Vicon system for performance capture and camera tracking, adopting the same workflow as studios such as ILM and Pixomondo.

The technical lead was Carlos Vilchis, a virtual production educator and consultant and Unreal-authorized instructor who has worked at AAA studios, including ILM. "The course leaders were completely agnostic about which motion capture technology to use, but I decided to introduce them to Vicon. I thought that if this is the specific technology we use at ILM for virtual production, why not use the same one?" says Vilchis.

"It was really important to make it as professional as we could within the budget we had, so that the cohort can take that knowledge and experience of a professional environment with them when they're looking for work or making their own films," says Todd. As well as the equipment and Vilchis, they brought in an experienced director of photography and veteran actors to help create the final shorts.

LEGACY SYSTEM, CUTTING-EDGE TECHNIQUES

The system that the creators used consisted of 24 Vicon T160 cameras, coupled with Shōgun 1.8 and paired with a hired LED screen. Not only was it an older motion capture system—it had also sat dormant for several years. That didn't turn out to be a problem.

"One of the advantages of Vicon technology is that we just needed to turn on the system, check that the license was working and that it was able to stream into the virtual production workstations, and it was ready," says Vilchis. "Despite being 15 years old, it was working perfectly with the latest version of Unreal Engine. We didn't need to change anything related to the motion capture system. The setup was perfect for doing the tracking in real time without any major changes to the stage.

"These were filmmakers with no previous experience of rigging, no previous experience of doing animation in Maya or anything like that. They just got started, and I was surprised how easy it was for them to do the calibration and put on their suits. They started streaming into Unreal Engine in just 30 minutes, and then the integration with the virtual production context and the real-time camera work was really smooth."

Vilchis says that if they had tried to use an alternative tracking solution, they would have run into difficulties mixing the different technologies into the same workflow. "In this case, I love the way that it was just a single software platform. Shōgun will get everything into Unreal Engine without any major problems. Just track the camera, track the actors and then you are doing everything in a single solution in a few clicks. That was super-useful for me, as I was trying to train people without previous CG experience."

Vilchis notes that while in an ideal motion capture environment there would be no occlusion, in professional settings such as ILM, it's extremely common for markers to become blocked from the cameras' view as props and people move about the stage. "But the tracking was solid, it was perfect for the camera, for the objects," he says.

"I like the fact that this university invested in a professional-level program for beginners in the field. It's uncommon," Vilchis says.

'PEOPLE JUST SAW THE POSSIBILITIES'

Vilchis and his colleagues spent five days working with the filmmakers and three actors to produce the shorts, which were shown at an event in August 2023.

"I think the people just saw the possibilities," says Todd. "Within a few classes they were building worlds and creating characters and telling stories and they were just so excited. And then when they got into the studio, they were so excited to see that 'Oh, I can actually make a film!'

"People saw that possibility and they're really motivated. I really want to be able to keep that momentum going and provide them with more opportunities"

For some of the attendees, the project has already opened doors. "One of the virtual production houses here in Vancouver reached out to us—they want to interview our graduates for eventual hiring. We also have another VFX company that's very interested in talking with our graduates to see if they could come in as paid interns," says Todd.

More broadly, she hopes that participants will take what they've learned back to their respective communities and share their skills.

Looking ahead, Todd has plans for IM4 Lab to do further AR and VR workshops, but she also wants to continue supporting the virtual production cohort with further learning and one-to-one mentoring. She also hopes to branch out and offer training in animation and the use of Unreal Engine to the Indigenous community.

"I really do think there's huge excitement around virtual production in the native community," says Todd. "We feel like we're starting to build this community, and I think what's great is there are other great labs out there supporting artists, too."

For more on IM4 Lab, visit:
https://im4lab.com/im4/