Theorm-AR: Multi Model – Visualisation using familiar devices

9th August 2022

What is Multi-Model Loading?

We've recently increased our Augmented Reality (AR) capabilities to include multi-model loading, to meet the evolving industry requirements and customer needs for XR. Users can now load multiple models at once into the same scene, making the technology even more flexible.

Previously, only one model at a time could be loaded into an AR session. However, with multi-model loading, users can now visualize and mark-up multiple models at once. This gives users greater flexibility in their everyday working processes. Allowing them to quickly alternate between looking at one model and another to see how they compare, line-up or fit the available space. Pre-defined digital layouts that were previously only available in Mixed Reality and Virtual Reality are also now available in Augmented Reality. With Theorem-XR supporting multiple devices and data types, and only needing to prepare data once, this additional functionality in AR is closing the gap for what devices can be used in XR use cases.

How is it Used? Real Augmented Reality Examples

Factory layouts are an excellent example of a use case where Theorem-AR's new multi-model loading is vital.

Being able to load pre-defined layouts on your smartphone or tablet enables you to work on much larger use cases such as defining shop floor plans in XR. You can visualize the relative scenery, components, and poseables, all on your handheld device.

It also gives you a good idea of how people will interact with a proposed factory layout. Including identifying what is in reach from a certain position, determining whether areas are accessible as well as assessing any risks. This can all be done in a re-configurable environment, allowing users to completely plan and adjust their layouts from the desktop before reviewing in AR.

The advantage of having this feature in Augmented Reality is that you can place the equipment models in your current environment. This means that you can visualize solid models in the room the

equipment is planned to be in. The ability to analyze a proposed layout in this way means users can ensure layouts are correct before attempting to implement them. And since AR doesn't require expensive headsets it's easy to adopt for everyone involved.

Enhance Your Design Processes

Another feature that is improved by multi-model loading is the ability to snap to a physical object with a digital model. With this feature, a physical object can be used as a reference point in order to automatically overlay a digital version. Users can now also arrange other parts around the digital model on desktop, which will appear when using this Snap To feature in AR. This allows users to test space requirements for a collection of parts using one part as a reference.

This combined with existing features, such as the mark-up tool to add notes and drawings, opens up the opportunity for engineers to collaborate with each other by identifying and easily sharing obstacles or flaws within a design.

To Recap

Extended reality is an excellent tool to remotely visualize design data from anywhere, and AR makes adoption even easier thanks to only requiring a handheld device such as a smartphone or tablet, which we all have access to. With the addition of multi-model loading users can now do even more with their data in AR; all while using a familiar technology that requires minimal training to use.

Factory layout planning is the best example of this, with users now having the ability to visualize layouts in the real world. Additionally, with design reviews, users can review multiple models from anywhere in the world.

Multi-model loading provides more options to address new use cases with AR, using devices that everyone has access to. Working around 3D design data has never been easier.

Factory layout Experience – Theorem Solutions

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Optimize designs in immersive XR

The Factory Layout Experience enables a planning or layout engineer, working independently or with a group of colleagues, locally or in remote locations, to optimize Factory layouts through the immersive experience of eXtended Reality (XR) technologies. Seeing your data at full scale, in context, instantly enables you to see the clashes, access issues and missing items which a CAD screen cannot show.

On the shop floor there are literally 1000’s of pieces of equipment- much of it bought in and designed externally. Building designs may only exist as scans or in architectural CAD systems, and robot cells may be designed in specialist CAD systems. There will be libraries of hand tools, storage racks and stillage equipment designed in a range of CAD systems, and product data designed in house in mechanical CAD. To understand the factory and assess changes, all of that has to be put together to get a full picture of where a new line, robot cell or work station will fit.

A catalogue of 3D resources can leverage 2D Factory layouts by being snapped to these layouts to quickly realize a rich 3D layout. Advanced positioning makes it very easy to move, snap and align 3D data. Widely used plant and equipment is readily available, there is no need to design it from scratch for every new layout. Simplified layout tools enable you to position, align and snap layout objects quickly, which can be used by none CAD experts, enabling all stakeholders to be involved in the process, improving communication.

Testing Design and Operational Factors

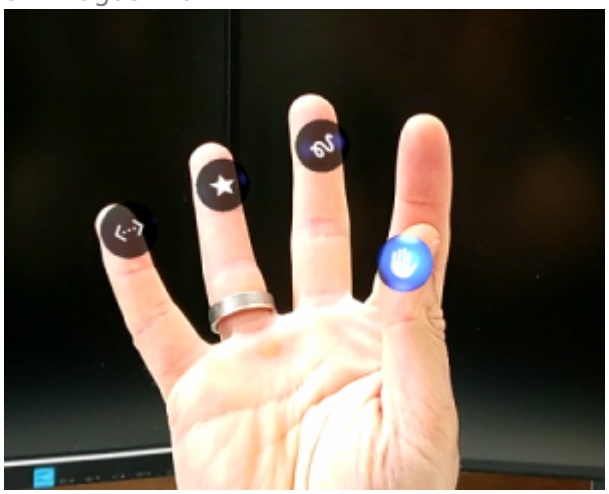
Human centred operations can be analysed using mannequins that can be switched to match different characteristics. You can test design and operational aspects of a variety of human factors, to determine reachability, access and injury risk situations, ensuring compliance with safety and ergonomic standards.

It enables companies to avoid costly layout redesign by enabling all parties involved to review the layout collaboratively, make or recommend changes, and capture those decisions for later review

by staff who could not attend the session.

Building an immersive pharma experience with XR technology

9th August 2022



In the world of pharma manufacturing, precision is key. To execute flawlessly, pharmaceutical scientists and operators need the proper training and tools to accomplish the task. User-friendly augmented reality (AR) and mixed reality (XR) technology that can provide workflow guidance to operators is invaluable, helping name brand companies get drugs, vaccines, and advanced therapies to patients faster.

AR has been a cost-effective way to improve training, knowledge transfers, and process execution in the lab during drug discovery and in the manufacturing suite during product commercialization. Apprentice's AR Research Department is now seeing greater demand within the pharma industry for XR software capabilities that allow life science teams to use 3D holograms to accomplish tasks.

For example, operators are able to map out an entire biomanufacturing suite in 3D using XR technology. This allows them to consume instructional data while they work with both hands, or better understand equipment layouts. They can see and touch virtual objects within their environment, providing better context and a much more in-depth experience than AR provides.

Users can even suspend metadata in a 3D space, such as the entrance to a room, so that they can interact with their environment in a much more complete way, with equipment, objects and instruments tethered to space. Notifications regarding gowning requirements or biohazard warnings for example will automatically pop up as the operator walks in, enriching the environment with information that's useful to them.

"It's all about enhancing the user experience," Linas Ozeratis, Mixed Reality Engineer at Apprentice.io. "At apprentice, our AR/XR Research Team has designed pharma-specific mixed-

reality software for the HoloLens device that will offer our customers an easier, more immersive experience in the lab and suite."

Apprentice's XR/AR Research Team is currently experimenting with new menu design components for the HoloLens device that will reshape the future of XR user experiences, making it easier for them to interact with menus using just their fingers.

Apprentice's "finger menu" feature allows users to trigger an action or step by 'snapping' together the thumb and individual fingers of the same hand. Each finger contains a different action button that can be triggered at any time during an operator's workflow.

"Through our research, we've determined that the fingers are an ideal location for attaching AR buttons, because it allows users to trigger next steps without their arm or hand blocking the data they need," Ozeratis added. It's quite literally technology at your fingertips."

Why does the pharma industry want technology like this? Aside from the demand, there are situations where tools like voice commands are simply not feasible. The AR Research Team also learned that interactive finger menus feel more natural to users and can be mastered quickly. Life science teams are able to enhance training capabilities, improve execution reliability and expand the types of supporting devices they can apply within their various environments.

"Introducing these exciting and highly anticipated XR capabilities is just one stop on our roadmap," Ozeratis adds. "There are bigger and bolder things ahead that we look forward to sharing as the pharma industry continues to demand more modern, intelligent technologies that improve efficiency and speed."

Rokid displayed their AR glasses to AWE 2022

9th August 2022

Liang Guan, General Manager at Rokid, enthusiastically stated:
"Numerous top-tech companies currently explore AR, XR, or the metaverse. As early as 2016, Rokid has been proactively expanding our AR product pipeline across leading technological areas of

optics, chips, smart voice, and visual image. Today, we have X-Craft deployed in over 70 regions and Air Pro has been widely used in 60+ museums around the world. Moving forward, Rokid will keep delivering real value to enterprises through its line of AR products."

Rokid products empower the frontline workforce, providing real-time analysis, views, and documents to the control center. Many media and participants were surprised after trying Rokid products. Saying that the various control modes provided by Rokid AR glasses are very convenient for users to operate and can effectively improve work efficiency.

Rokid X-Craft, demonstrated live at the AWE 2022, has officially received ATEX Zone 1 certification from TUV Rheinland Group. Becoming the world's first explosion-proof, waterproof, dustproof, 5G, and GPS-supported XR device. This is not only a great advance in AR and 5G technology but also a breakthrough in AR explosion-proof applications in the industrial field. Many users at the event said after the trial that safety headsets are comfortable to wear and are highly competitive products in the market. It not only effectively ensures the safety of front-end staff, but also helps oil and gas fields increase production capacity.

Rokid Air Pro, a powerful binocular AR glasses, features voice control to help you enjoy a wide variety of media including games, movies, and augmented reality experiences. Rokid Glass 2, provided real-time analysis, views, and documents to the control center, and successfully improved traffic management and prevention to ensure the long- term stability of the city.

New Consortium REVVED To Research VR And AR For Electric Vehicle Manufacturing And Education

9th August 2022

The unprecedented need to develop a workforce that can build and service electric and

autonomous vehicles and develop the cybersecurity to protect them is the driving force behind the new consortium.

Industry partners involved are BMW, Michelin, Bosch, Daimler, Proterra and Volvo.

The consortium is named “Collaborative Research: REVVED,” short for Revolutionizing Electric Vehicle Education, is receiving $2.83 million from the National Science Foundation to fund the project.

One of the main goals is to strengthen learning and retention among students from rural areas, veterans and students who are from groups underrepresented in the workforce.

Digital learning systems are especially attractive for students who are non-traditional and underrepresented in the workforce, researchers said.

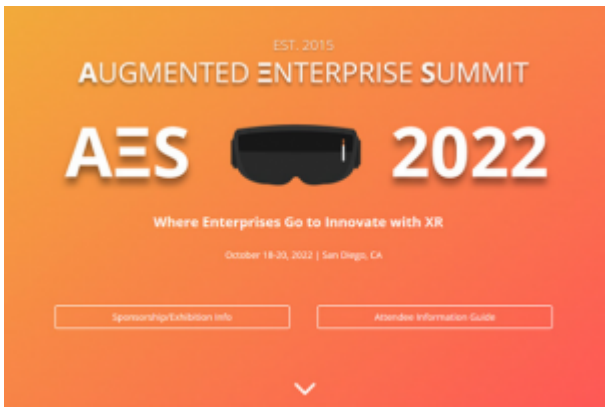
Mary Thornley, president of Trident Technical College, said REVVED addresses a critical need in South Carolina and across the country.

“Our country has an unprecedented need, the need for a new generation of talent to respond to international competition for an automotive workforce with up-to-date skill sets required for the manufacturing and servicing of electric and autonomous vehicles,” Thornley said. “We are excited to work with strong partners to create that talent to ensure state and national competitiveness.”

Readers can find out more about this new initiative by reading the original article on Clemsen News.

Enterprises head to San Diego to discuss impact of AR VR MR (XR) and Metaverse technologies at the 9th Augmented Enterprise Summit

9th August 2022



Hundreds of the world's most profitable and well-known companies are already using **augmented, virtual, and mixed reality (XR) to deliver the benefits of digitization to the modern workforce.** These organizations are seeing ROI in the form of faster training, shorter design cycles, higher quality, less downtime, reduced waste, and increased customer satisfaction.

Hear from those driving XR and other emerging technologies in enterprise at the **2022 Augmented Enterprise Summit** when it returns in-person October 18-20 at the newly renovated Town & Country Resort Hotel in San Diego. As always, the event will feature a world-class lineup of enterprise end users along with the largest curated expo of enterprise-ready XR solutions. Organizations at every stage of adoption will get to **hear how the world's biggest companies are leveraging XR**, try out the top hardware/software, and connect across industry lines.

"[AES] has consolidated its position as the nexus of the growing enterprise XR ecosystem, with the ability to bring together both augmented reality companies and the large enterprises that are now testing and implementing XR solutions." – Forbes

The Speakers

Leading innovators from companies like **Abbott, Bank of America, Con Edison, DuPont, Ford, GM, Kohler, Marathon Petroleum**, and **Ulta Beauty** will share insight into adopting and deploying XR and related emerging technologies for applications such as remote support, collaboration, work instructions, training, design, marketing, safety, and sales.

The Program

The comprehensive educational program includes case studies across industry verticals with deep discussions on specific immersive applications, best practices, security, enabling technologies like 5G and AI, IIoT, the Metaverse, and more.

The Exhibit

Get hands-on in the carefully curated expo of **AR smart glasses, MR/VR headsets, body-worn sensors, exoskeletons, and other connected devices** ready for deployment today, along with the platforms and technologies that power them.

For information and tickets, visit www.augmentedenterprisesummit.com. Early bird rates expire August 29. Attendees are encouraged to register early as space is limited.

Official Event Brochure: https://augmentedenterprisesummit.com/aes-2022-brochure/

Managed and hosted by long standing AREA partner BrainXChange – see their partner page.

Building a business case for XR in Telecoms and Media

9th August 2022

The Telecoms and Media landscape could be perfectly poised to benefit from the advantages extended reality offers. XR has already proven itself as a powerful tool for communication and collaboration, capable of connecting people like never before. This gives Telecoms companies a new landscape to experiment with when it comes to offering communication services to brands.

At the same time, as the communications space grows increasingly complex, with endless new technology appearing on the market all the time, XR can empower employees too. The right solutions can improve training opportunities, enhance day-to-day processes, and support businesses in achieving better CX outcomes.

The question is, how do you build a business case for XR in telecoms and media your shareholders and business leaders can get behind?

Step 1: Consider the Evolving Industry

Companies in the media and telecoms landscape need to stay on the cutting edge if they want to survive in today's competitive landscape. This means offering services and support relevant to the needs of their customers. Even if your company might not be using XR solutions in-house, it may be important to offer these tools to customers and clients.

For instance, telecoms companies could offer access to XR app-building environments, and other accompanying technologies for brands hoping to step into the XR world. Things like 5G connectivity will be particularly important for vendors building new XR landscapes.

As concepts like the metaverse grow more appealing, and companies look for more ways to interact with their client using immersive technology, media and telecoms companies will need to ensure

they’re considering the part they can play in the XR environment. Whether this means offering marketing campaigns in XR, sales strategies enhanced by XR, or 5G connectivity for immersive experiences, don’t fall behind the competition.

Step 2: Find Opportunities to Improve Operations

In any industry, the hunt is always on for ways to improve the efficiency and productivity of teams. In the telecoms landscape, an evolving number of tools and services in the landscape is leading to significant complexity in the workplace. Inspecting, maintaining, and repairing devices at scale can require a lot of investment in talent and travel.

With XR, companies can improve their daily operations using a range of different tools. For instance, an AR or MR solution will allow experts to assess a piece of technology from a distance, allowing for quicker inspection processes with massive cost savings. Additionally, the telecom sector can also use extended reality environments to help with the repair and maintenance of undersea, and underground cables, as well as other advanced networking tools.

Identifying issues in a virtual environment can allow for the use of automated systems and extra guidance to technicians in the breakdown area. This means problems with the communication ecosystem can be solved more rapidly, leading to better customer experiences.

Step 3: Highlight Opportunities for Improved CX

Speaking of customer experiences, XR offers an excellent opportunity for all kinds of companies to take advantage of new interactions with customers. In the media landscape, experts can create engaging AR ads and VR experiences for customers on behalf of companies, taking full advantage of the evolving metaverse and virtual event space.

In the telecoms space, companies can use XR to sell to customers and support clients like never before. XR can enhance the entire customer journey, starting with immersive demonstrations of how products and services might work, and continuing to the use of VR manuals for users learning how to access a new system. Companies can even build entire immersive onboarding experiences, where customers are prepped for success with insights into how each tool or service works.

With XR, it’s even possible to improve long-term customer service, by ensuring engineers and technicians can walk customers through strategies on how to fix common problems in a more powerful digital or augmented environment. This also saves companies money when it comes to sending technicians to field locations.

Step 4: Explore The Benefits of Better Collaboration

XR is an incredible tool for collaboration, allowing teams to share a space where they can connect over ideas, see reports and analytics presented in a range of different formats, and interact with digital assets. With XR, telecoms companies can connect specialists and experts working from locations all over the world in a shared environment.

A telecoms or media brand could provide a user with a pair of AR or MR glasses connected to a specialist who can offer guidance and support in real-time when the user is working on a complex task. This allows for better teamwork without having to have multiple people present in the same environment. The same technology can even help with the support of field service technicians.

In XR, experts can learn about technologies in a collaborative environment, discuss trends using visual insights, and work together on solving complex problems like service outages in certain data centers. The XR environment powers a future of intelligent workplace experiences for professionals who might not always work in the same physical environment.

Step 5: Look at Potential Cost Savings

Initially, implementing a disruptive new technology like XR into your business might seem like an expensive process. However, the reality is that the investment can pay off significantly in the long-term. For instance, using innovative environments for VR collaboration to bring your teams together on complex challenges can reduce the need for expensive travel.

Making sure your agents can access VR environments to plan fixes for complex telecommunications technology, then send the information they collect to engineers on the front line can reduce the downtime of various essential tools. This can also reduce the amount of money telecoms companies lose in honouring SLA agreements with customers, while improving customer satisfaction.

XR can also give you a powerful way to stand out among the competition, meaning you don't have to work as hard to capture new potential customers for your brand. XR doesn't just save money, it can help brands make more money too.

How Augmented Reality is helping Manufacturers Go Green

9th August 2022

We often debate the role of technology in the field of sustainability. There is no disputing the fact that new advances in technology have led to the use of more energy, which is obviously continuing

to have a terrible impact on the environment.

However, new technology can also be advantageous in the fight against environmental problems like the loss of natural resources and climate change in other ways. It can offer newer, more efficient ways to solve existing problems. This can lead to more energy efficient solutions with lower carbon footprints. It can also help products be more durable, which means that they won't need to waste as many resources.

One of the new forms of technology that can help manufacturers improve sustainability is augmented reality.

In order for the computer to create this environment, it has to use many sensory modalities. Basically, your vision and hearing will be heightened since these are sharpened.

Augmented reality is also combined with artificial intelligence, and this has led to many breakthroughs in a wide range of fields.

AR has greatly improved manufacturing processes. It has made training a lot easier and faster, improved the performance of operators, enhanced throughput and other processes.

Companies that want to embrace sustainability should invest in the right augmented reality technology. Augmented reality can provide instructions for assembly processes, maintenance, machine setup change over and more. Thanks to these real time visuals, it helps to decrease the amount of time it takes to understand instructions improving workflow and productivity.

The author then goes on to explore the AR Benefits for Sustainable Companies in more detail which can be read on the original article.

1. Avoid wasting natural resources and energy building prototypes by enabling you to make products come to life

2. More energy and resource efficient processes

3. Makes complex processes simpler

4. Visualized workflow for simple troubleshooting

5. Lower cost

Augmented reality is certainly unprecedented in its ability to make processes much clearer and integrate data. This will help users to easily understand problems, fix them and even prevent them from happening.

Augmented Reality Helps Manufacturers Be Eco-Friendlier

There are a lot of new technological breakthroughs that can help drive sustainability. Augmented reality is one of them. These benefits will help manufacturers reduce their carbon footprint and compete against less environmentally friendly companies.

Holo-Light XR Expands to the United States

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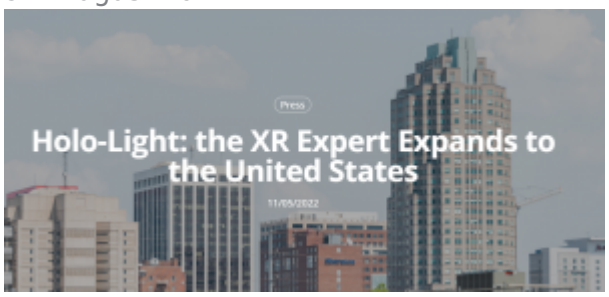

By expanding into the US, the Augmented and Virtual Reality (XR) specialist will increase its proximity to existing local customers and partners and expand its customer base in the United States. Holo-Light already serves a steadily growing number of companies in the US, including BMW Group, Procter&Gamble, Denso and a number of leading aerospace companies.

Chief Executive Officer Florian Haspinger said, „We're creating a game changer for the Industrial Metaverse: a streaming service for XR applications with an intuitive user experience, compelling 3D experiences and globally available immersive content. The United States is one of the world's leading markets in Augmented and Virtual Reality, so this expansion is an important milestone for Holo-Light.

"The company's XRnow streaming-as-a-service ecosystem brings the power of the cloud to mobile XR devices – combining endless computing power and smart orchestration of resources with high scalability. Hosting, running and streaming AR/VR applications from the cloud allows users to access high-polygon, complex 3D content at any time, regardless of location.

"We already serve more than 100 customers worldwide. Now, we´re using the capital from our recent funding round to further expand our business, relationships and competitive advantage globally. The Durham office puts us right in the heart of the Triangle, in close proximity to companies such as Lenovo, Epic Games, and Google," said Helmut Gulde, Chief Corporate Development Officer.

In the future, in addition to the Durham location, the company plans to open an office on the West Coast of the United States.

Last December, Holo-Light closed its largest-ever financing round of $6,3 million with EnBW New Ventures, Future Energy Ventures and Bayern Kapital. With XRnow, the young company has combined its two in-house products: the remote rendering software component ISAR SDK and the XR application AR3S for collaborative work on 3D CAD models. Holo-Light is aiming for a Series B financing round with international investors within the next 12 months.

TeamViewer and SAP Join Forces to Digitalize Warehouse Operations with Augmented Reality

9th August 2022

With TeamViewer Frontline Augmented Reality, an SAP endorsed app from TeamViewer and part of SAP's industry cloud portfolio, customers can further enhance their logistics processes in SAP EWM and empower their workforce with AR-based vision picking that helps to increase productivity and create more efficient processes across their entire warehouse and logistics operations.

Stefan Krauss, SVP, General Manager Discrete Industries and Energy & Natural Resources at SAP, said: "The effects from the recent disruptions in the global supply chain have been felt by almost everyone. Companies who have adapted the quickest have deployed agile warehouse management applications like SAP EWM, enabling them to rapidly adjust to external shocks and respond to demand, supply and workforce challenges quickly. Now with the integration of TeamViewer's AR-based vision picking solution, together we can help our customers build more resilient supply chains that are also cost-effective to run."

Alfredo Patron, Executive Vice President Business Development at TeamViewer, said: "Our partnership with SAP is based on a set of common goals: innovation and disruption through cutting-edge technologies that support companies in their digital transformation. Our vision picking solution significantly improves warehouse inbound and outbound processes, resulting in faster pick rates, better accuracy, and ultimately higher customer satisfaction. Moreover, it reduces the training and onboarding time of workers in a high employee churn environment."

The integration with Frontline and SAP EWM enables businesses to directly connect warehouse and logistics workers in real-time with the critical data and information they need to perform their tasks. The AR-based workflows provide step-by-step instructions to workers on smart glasses and wearable devices that enable them to work hands-free, improving pick rates by an average of 10-15 percent and dropping error rates close to zero. At the same time, new data insights are passed back into the SAP EWM application right at the point of work to enable continual process validation and optimization that can drive significant cost savings.

This integration is the latest step of the successful partnership between TeamViewer and SAP and

adds to the enhanced value already realized with integrations into SAP Field Service Management and SAP Service and Asset Manager, both part of SAP's Digital Supply Chain portfolio. TeamViewer's commitment and continuous investment into its partnership with SAP was recently recognized with an SAP Pinnacle Award in the category 'Partner Application – Industry Cloud.'