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**Adobe Inc. - 2022's Pantone Color of the Year is a brand-new hue for the metaverse age**

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2022's Pantone Color of the Year is a brand-new hue for the metaverse age

2022's Pantone Color of the Year is a brand-new hue for the metaverse age

Image credit: Adobe Stock / troyanphoto.

Pantone had a surprise in store with their choice of 2022 Color of the Year: Very Peri (PANTONE 17-3938). Rather than pick from their extensive catalog, for the first time in the Color of the Year's 23-year history, the Pantone Color Institute decided to create an entirely new color to "reflec[t] the global innovation and transformation taking place" as we emerge from isolation into a radically changed world. The color unexpected - not unlike our transition into the world's new post-pandemic normal.

Last year, Pantone's two-color choice showed how uncertain the world felt going into 2021, but this year, we look towards something brand-new. Very Peri mirrors our collective desire to get back a sense of play, fun, and hope. It's revitalizing and joyful. Even Pantone's video short introducing the color evokes a sense of spritely whimsy. Bubbles pop into tendrils of furry, fiber optic texture, undulating in an unseen current.

This new color communicates a readiness for the future. According to Leatrice Eiseman, executive director of the PANTONE Color Institute, "As we move into a world of unprecedented change, the selection of PANTONE 17-3938 Very Peri brings a novel perspective and vision of the trusted and beloved blue color family, encompassing the qualities of the blues, yet at the same time with its violet red undertone, PANTONE 17-3938 Very Peri displays a spritely, joyous attitude and dynamic presence that encourages courageous creativity and imaginative expressions."

The pandemic has shifted our experiences online towards a primarily digital space, and the line between physical and virtual has blurred. Very Peri's purplish hue is associated with high-contrast gaming and technology and online spaces, and invokes the concept of the metaverse and our evolving relationship to it. Soft blue combines with warm base notes of red to create this shade that illustrates depth, comfort, and balance.

What began as a tech space color has become an aesthetic brands are adopting for everything from movie posters and album covers to product packaging and otherworldly haute couture. The color was also unveiled digitally as well as the traditional swatch - a sign of the digital world firmly making its mark.

Image Credit: Left: Adobe Stock / hatthranit Osman, Right: Adobe Stock / Татьяна Леднева.

Coloring outside the box

Historically, purple has been underutilized commercially, treated as more of a supplemental, niche color. Though that's changing, as technology companies have embraced it to stand out from the crowd - with Roku and Twitch both using it in their branding and logos. The growing trend left Brenda Milis, Adobe Stock's principal of consumer and creative insights, seeing purple - everywhere. "A lot of brands began releasing purple app icons. It developed into a trend as a very blue-inflected purple - often referred to as 'blurple' - began to dominate online spaces through 2021. There's a warmth to it, so it offers a sense of comfort. It's not hitting you over the head with a strident tone."

Very Peri allows designers to branch out into experimental territory without losing feelings of reassurance and delight. Its capacity matches perfectly with what we predict in our 2022 creative trends forecast.

Very Peri's energy and jubilance work well with the Powerfully Playful visual trend and the Soft Pop design trend. Both focus on positivity and cheer with an underlying sense of wellbeing and nostalgia. The motion trend, Dimensional Delights, taps into these emotions too while sitting on the cutting-edge of dreamlike visual styles that delve into bold, new frontiers.

Image credit: Adobe Stock / troyanphoto.

https://main--blog--adobe.hlx3.page/media_13602a15ee08a6b2b2cb7b73f40bc3251b0374d54.mp4

Image credit: Adobe Stock / Stu Ballinger.

The dawning era of digital discovery

Speaking of new frontiers, more people are turning to the concept of the metaverse to understand our expanding footprint in digital spaces. Very Peri reflects this exact cultural moment where our connections are increasingly formed in virtual landscapes. Gaming platforms like Roblox are teaming up with fashion brands like Gucci to sell digital merchandise for avatars in their virtual world. Nike purchased RTFKT, a virtual sneaker company that designs shoes as NFTs specifically for the metaverse. Very Peri is featured heavily in this imagery, especially by brands seeking a way to connect with tech-savvy audiences in digital spaces.

Tom Spota, head of motion at Adobe Stock, considers Very Peri an essential element in the Metaverse Mix motion trend. "When you see companies like Nike making acquisitions like that, you know you should pay attention. Very Peri has a part to play in this new vision. It's a color that represents these digital universes. It's a color you want to be using for these concepts."

Milis agrees. "The metaverse is a place of connection, innovation, socializing, and creativity. It's a totally decentralized set of spaces and places. Nobody controls it. It's like the internet. It's so big now that brands are getting in on the aesthetic with a color palette that evokes those same feelings of connection. Very Peri is very of the moment."

The idea of the metaverse captivates our imagination, and the color of the year has been illustrating techno-futuristic worlds since the seventies and eighties. "It's not necessarily a new color to represent digital spaces," says Spota. "This color has been used in cyberspace and metaverse artwork on the covers of novels for decades. You look at William Gibson's Burning Chrome or Neuromancer, for example, and you see they incorporate Very Peri. It's retro-futuristic. I think it's because it's not a color you often see in the natural world. It's synthetic, artificial, but pleasant to look at."

Image credit: Left: Adobe Stock / Julia Manga Right: Adobe Stock / Clique Images/Stocksy.

https://main--blog--adobe.hlx3.page/media_148d388d7dd403daa6c402939e90ef294ecfdad30.mp4

Image credit: Adobe Stock / OlScher.

Purposeful optimism and grit

Very Peri is also inspiring because it marks a time when we are learning to find moments of joy and happiness where we can, despite the challenges we face every day. According to Milis, "Very Peri hits the right notes because it synchs with the pillars of our 2022 trends - positivity and optimism. It's not a thoughtless optimism. There's a foundation of grit to it. It's speaking to our determination to remain hopeful and keep the home fire in our hearts warm and burning."

Explore the Adobe Stock Color of the Year Very Peri curated gallery for ideas on how you can incorporate this beautiful, innovative hue in your work.

Feeling inspired? Upload your work to Adobe Stock.

https://blog.adobe.com/en/publish/2022/01/25/wiji-lacsamanas-whimsical-world-of-filipino-beliefs-personal-rituals-and-heritage

https://blog.adobe.com/en/publish/2022/01/12/optimism-and-defiance-the-adobe-stock-2022-creative-trends-forecast

https://blog.adobe.com/en/publish/2022/01/10/adobe-stock-artist-development-fund-final-2021-recipients

* Original Link

 

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CE Noticias Financieras English
**Adobe recommended for investment in its platform in the metaverse**

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A technology analyst recommended investing in the giant Adobe, as it will be one of the main winners in building the metaverse.

"Adobe is the best software play for the metaverse: its creative tools will enable the next generation of the Internet," said Jefferies technology analyst Brent Thill.

At present, the metaverse is a technology that is not yet fully defined. But the core concept is simple: the metaverse will be a shared virtual world, combining aspects of social networking, video games and the Internet. It will allow people to interact with content, interact with each other and experience almost anything, so the implications of this technology could be staggering.

Similarly, the metaverse economy will likely mirror the real-world economy, meaning that consumers will be able to shop, attend events and play games. In other words, providing a high-quality experience will be as critical in a virtual world as it is in the real world.

With this new technology on the rise, Adobe will be a big winner in building the metaverse. So says Brent Thill, technology analyst at Jefferies and widely followed on Wall Street. "Adobe is the best software platform for the metaverse: its creative tools will enable the next generation of the Internet," he said. The analyst also reiterated a "buy" rating and a $680 price target on Adobe.

Meanwhile, venture capitalist Matthew Ball recently put a price tag on the metaverse, estimating that it could be a $30 billion market opportunity within 10 years. Some CEOs have been even bolder, predicting that the metaverse economy could eventually surpass the $80 trillion real-world economy.

AT THE FOREFRONT

The growth of the Metaverse will bring the arrival of a new way of doing business: meta Commerce. What is it? This innovative way of doing e-commerce is born from the need to adapt day after day to the exponential growth of ecommerce, where all the current potential of digital commerce is combined with a new generation of internet that allows immersive, multisensory and sustainable experiences through technology.

Today the big brands are behind the metaverse and this fever for this technology is no coincidence. Users of this new universe spend money to buy clothes, sneakers or even houses, which they can only enjoy in front of a screen.

In this process of digital transformation, Adobe (ADBE) today divides its business into three software clouds: creativity, digital documents and customer experience. Creative Cloud is perhaps the best known, with tools such as Photoshop for image editing, Premiere Pro for video editing and After Effects for cinematic special effects, which are leading products in the market. In addition, many of the Adobe Document Cloud applications have also become industry standards, such as Acrobat for PDF management.

The other part of Adobe's business is Experience Cloud, a suite of software and services for analytics, marketing and commerce. Those tools rely on artificial intelligence to help companies collect data, target content and personalize the customer journey across mobile apps, websites and other digital channels. Research firm Gartner has recognized Adobe as a leader in the digital experience industry, citing its ability to manage customer data and personalize content as key differentiators.

The company is well positioned to maintain that momentum, as many solutions in its portfolio are relevant to the metaverse, especially in the Creative Cloud and Experience Cloud suites. Some Adobe tools that are key to this are:

Adobe Substance 3D: this is a platform for creating, organizing and texturing 3D content. Substance 3D is already essential to most video game and visual effects workflows, and should be a valuable resource for

creating the virtual content within the metaverse.
https://www.adobe.com/cl/products/substance3d/3d-augmented-reality.html

Adobe Aero: The most intuitive way to create, view and share immersive Augmented Reality (AR) experiences. You can create AR experiences with assets you designed in your favorite apps, without the need for complex coding. https://www.adobe.com/cl/products/aero.html

Adobe Sensei: It's the Artificial Intelligence (AI) and machine learning engine to make designing customer experiences easier, helping you create effortlessly, make informed decisions and target marketing for better results. https://www.adobe.com/cl/sensei.html.

"Since its inception, Adobe has been synonymous with constant innovation. With the advent of new technologies such as the metaverse into people's daily lives, Adobe becomes the best choice for the digital transformation of companies because of its variety of products and tools. Now it is the task of companies to continue exploring the metaverse and work every day to be a contribution to this ecosystem," said Max Ruiz, regional director of Adobe.

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**ADOBE Inc. Patent Issued for Interfaces and techniques to retarget 2D screencast videos into 3D tutorials in virtual reality (USPTO 11030796)**

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English


2021 JUN 28 (VerticalNews) -- By a News Reporter-Staff News Editor at Journal of Engineering -- According to news reporting originating from Alexandria, Virginia, by VerticalNews journalists, a patent by the inventors DiVerdi, Stephen Joseph (Oakland, CA, US), Kumaravel, Balasaravanan Thoravi (Berkeley, CA, US), Nguyen, Cuong (San Francisco, CA, US), filed on October 17, 2018, was published online on June 8, 2021.

The assignee for this patent, patent number 11030796, is ADOBE Inc. (San Jose, California, United States).

Reporters obtained the following quote from the background information supplied by the inventors: "Various Virtual Reality (VR) design techniques such as painting, sketching, and sculpting in VR are emerging forms of artistic expression. Generally, VR design relies on the ability to move a hand in mid-air to directly manipulate and create 3D shapes. This what-you-see-is-what-you-get paradigm was foreseen by early research, and yet has only recently become widely available due to advancements in VR optics and spatial tracking technologies. The freedom of expression in VR is perhaps one of the main reasons VR design has received significant interest from creative communities.

"There is a growing interest among the creative community to explore and learn new techniques in VR painting, for example. Currently, most users learn using community posted 2D-videos on the internet. The most common form of knowledge sharing among VR creatives today is the use of 2D screencast videos that capture an instructor recording of a VR painting process."

In addition to obtaining background information on this patent, VerticalNews editors also obtained the inventors' summary information for this patent: "Embodiments of the present invention are directed to retargeting an external video, such as a screencast video, into a VR host application environment. At a high level, one or more VR-embedded widgets can be rendered on top of a VR environment for an active VR host application. To accomplish this, the rendering and event system of the VR host application can be injected into code for a VR-embedded widget to facilitate rendering the widget on top of the VR host application, and responsive to a user's VR inputs. As such, various VR-embedded widgets can provide interactive tutorial interfaces directly inside the environment of the VR host application.

"In some embodiments, a VR-embedded video retargeting system can accept as inputs a 2D video, such as a screencast video (e.g., captured from both eyes of an instructor), and corresponding log data comprising a 3D drawing and activity traces of a VR device used in the 2D screencast video tutorial to generate the 3D drawing. The log data can include timestamped controller poses (e.g., position and orientation), head-mounted display (HMD) poses, button presses, and/or traces derived therefrom such as fine-grained brush and color data. The VR-embedded widgets can use the log data to deliver more effective 3D instructions for an associated 2D video and enhance a user's ability to understand controller interactions and 3D information depicted in the 2D video. The VR-embedded widgets can include a VR-embedded video player overlay widget, a perspective thumbnail overlay widget (e.g., a user-view thumbnail overlay, an instructor-view thumbnail overlay, etc.), an awareness overlay widget, a tutorial steps overlay widget, and/or a controller overlay widget, among others.

"In some embodiments, a video player overlay widget can be rendered on top of a VR application environment and configured to playback external video content. Designated events (e.g., author annotations, automatically detected events, etc.) can be represented on corresponding portions of a video timeline on the video player overlay widget. Various types of events may be automatically detected by analyzing the video and/or corresponding log data. In some embodiments, the beginning and ending of tutorial steps can be identified from gaps in space and/or time in log data (e.g., gaps between clusters of 3D strokes). Different events (e.g., designated important events, tool/mode changes, step transitions, detected events, etc.) may be depicted on the video timeline as different icons. Such icons not only provide navigation cues, but also provide temporal awareness of the corresponding events (e.g., events emphasized by the author).

 

"Additionally or alternatively, one or more perspective thumbnail overlay widgets can render a 3D controller simulation scene associated with a video tutorial of VR (e.g., a screencast video) and/or a corresponding 3D drawing. The 3D controller simulation scene can illustrate in 3D the actions of, and interactions with, an instructor's controller from a 2D video in order to help users better understand stroke structure and controller interactions. Log data associated with a 2D video (e.g., such as a 3D drawing, HMD and controller 3D positions and orientations, controller button press events, and the like) can be used to generate and animate the 3D controller simulation scene from different perspectives. A perspective thumbnail overlay widget that presents a simulation from the perspective of the viewer is called a user-view overlay widget. Similarly, a perspective thumbnail overlay widget that presents a simulation from the perspective of the instructor is called an instructor-view overlay widget.

"In some embodiments, an awareness overlay widget may be provided as an extension of the video player overlay widget. When a user looks away from a video playing in the video player overlay widget, an awareness overlay widget can appear. The awareness overlay widget may provide the user with abbreviated information about the video, such as visual information about the progress of the video and/or various events from the video.

"These and other VR-embedded widgets are contemplated within the scope of the present disclosure. Using implementations described herein, a user can efficiently and effectively view 2D videos, such as screencast videos and related information, as tutorials inside a VR host application."

The claims supplied by the inventors are:

"1. A method comprising: intercepting, by a virtual reality (VR)-embedded video application, a rendered three-dimensional (3D) environment transmitted by a VR design application to a VR display before the VR display receives the rendered 3D environment; rendering, by the VR-embedded video application, a composite 3D environment by rendering a VR-embedded widget on top of the rendered 3D environment; outputting, by the VR-embedded video application, the composite 3D environment to the VR display; evaluating, by the VR-embedded video application, VR inputs transmitted to the VR design application before the VR design application receives the VR inputs; intercepting, by the VR-embedded video application, a first set of the VR inputs that interact with the VR-embedded widget in the composite 3D environment; and determining, by the VR-embedded video application, not to intercept a second set of the VR inputs that do not interact with the VR-embedded widget in the composite 3D environment, wherein the VR-embedded widget is configured to present at least one of an external two-dimensional (2D) screencast video or a three-dimensional (3D) simulation scene associated with the external 2D screencast video.

"2. The method of claim 1, wherein the VR-embedded widget is configured to render the external 2D screencast video stereoscopically.

"3. The method of claim 1, the method further comprising rendering, based on a determination that the VR-embedded widget is not visible in a field of view, a view-fixed awareness overlay widget configured to present visual information about the external 2D screencast video.

"4. The method of claim 3, wherein the view-fixed awareness overlay widget includes a video timeline with icons representing events of the external 2D screencast video, wherein the icons are configured to temporarily increase size as corresponding events approach.

"5. The method of claim 1, the method further comprising automatically detecting events in the external 2D screencast video by analyzing at least one of the external 2D screencast video or corresponding log data.

"6. The method of claim 5, wherein the VR-embedded widget includes a video timeline with icons representing the detected events.

"7. The method of claim 1, wherein the external 2D screencast video comprises a live stream of an instructor retargeted in real-time, and wherein the VR-embedded widget is configured to act as a communication bridge.

"8. A system comprising: one or more hardware processors and memory configured to provide computer program instructions to the one or more hardware processors; and a means for rendering a VR-embedded widget on top of a rendered three-dimensional (3D) environment of an active VR host application by using the one or more hardware processors to: evaluate VR inputs transmitted to the active VR host application before the active VR host application receives the VR inputs; intercept a first set of the VR inputs that interact with the VR-embedded widget in the composite 3D environment; and determine not to intercept a second set of the VR inputs that do not interact with the VR-embedded widget in the composite 3D environment, wherein the VR-embedded widget is configured to present at least one of an external two-dimensional (2D) screencast video or a three-dimensional (3D) simulation scene associated with the external 2D screencast video.

 

"9. The system of claim 8, wherein the VR host application comprises a rendering and event system, and wherein the system additionally comprises an injection component configured to inject the rendering and event system of the VR host application into code for the VR-embedded widget.

"10. The system of claim 8, additionally comprising an event detector configured to automatically detect events in the external 2D screencast video by analyzing at least one of the external 2D screencast video or corresponding log data.

"11. The system of claim 10, wherein the VR-embedded widget is configured to represent the detected events as icons on a video timeline.

"12. A system comprising: one or more hardware processors and memory configured to provide computer program instructions to the one or more hardware processors; an injection component, of a virtual reality (VR)-embedded video application, configured to use the one or more hardware processors to: intercept a rendered three-dimensional (3D) environment transmitted by a VR design application to a VR display before the VR display receives the rendered 3D environment; render a composite 3D environment by rendering a VR-embedded widget on top of the rendered 3D environment; evaluate VR inputs transmitted to the VR design application before the VR design application receives the VR inputs; intercept a first set of the VR inputs that interact with the VR-embedded widget in the composite 3D environment and pass the first set of VR inputs to the VR-embedded widget; determine not to intercept a second set of the VR inputs into the VR design application that do not interact with the VR-embedded widget in the composite 3D environment; and output the composite 3D environment to the VR display, wherein the VR-embedded widget is configured to present at least one of an external two-dimensional (2D) screencast video or a three-dimensional (3D) simulation scene associated with the external 2D screencast video.

"13. The system of claim 12, wherein the VR-embedded widget is configured to render the external 2D screencast video stereoscopically.

"14. The system of claim 12, the VR-embedded video application further configured to render, based on a determination that the VR-embedded widget is not visible in a field of view, a view-fixed awareness overlay widget configured to present visual information about the external 2D screencast video.

"15. The system of claim 14, wherein the view-fixed awareness overlay widget includes a video timeline with icons representing events of the external 2D screencast video, wherein the icons are configured to temporarily increase size as corresponding events approach.

"16. The system of claim 12, the VR-embedded video application further configured to automatically detect events in the external 2D screencast video by analyzing at least one of the external 2D screencast video or corresponding log data.

"17. The system of claim 16, wherein the VR-embedded widget includes a video timeline with icons representing the detected events.

"18. The system of claim 12, wherein the external 2D screencast video comprises a live stream of an instructor retargeted in real-time, and wherein the VR-embedded widget is configured to act as a communication bridge."

For more information, see this patent: DiVerdi, Stephen Joseph. Interfaces and techniques to retarget 2D screencast videos into 3D tutorials in virtual reality. U.S. Patent Number 11030796, filed October 17, 2018, and published online on June 8, 2021. Patent URL: http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=11030796.PN.&OS=PN/11030796RS=PN/11030796

Keywords for this news article include: Business, ADOBE Inc..



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**Virtual Classroom Software Market to Witness Massive Growth | Zoom, Cisco Webex Meetings, Adobe Connect, Schoology**

866 words
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English


The ' Virtual Classroom Software market' research report added by Report Ocean, is an in-depth analysis of the latest developments, market size, status, upcoming technologies, industry drivers, challenges, regulatory policies, with key company profiles and strategies of players. The research study provides market overview; Virtual Classroom Software derived key statistics, based on the market status of the manufacturers and is a valuable source of guidance and direction for companies and individuals interested in Virtual Classroom Software market size forecast, Get report to understand the structure of the complete fine points (Including Full TOC, List of Tables & Figures, Chart).

Download Free Sample Copy of 'Virtual Classroom Software market' Report @

https://reportocean.com/industry-verticals/sample-request?report_id=QY39508

A combination of factors, including COVID-19 containment situation, end-use market recovery & Recovery Timeline of 2020/ 2021

covid-19 scenario

Market Behavior

End Industry Behavior

Expected Industry Recovery Timeline

Expected Key Dynamic

Business Impact Horizon

Fast recovery – Opening of economy by Q2 2020

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Gradual recovery – Opening of economy by Q3 2020

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Partial recovery – Partial opening of economy by Q3 2020

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Slow recovery – Opening of economy extended till Q4 2020 / Q1 2021

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A systematic step framework for How to Tackle The Situation… “MITIGATE” | “SUSTAIN” | “GROW”: Business Strategy Recovery, Scenario and Planning

Key Segments Studied in the Global Virtual Classroom Software Market

Professional Key players:

Zoom, Cisco Webex Meetings, Adobe Connect, Schoology, Blackboard, Panopto , Top Hat, LearnCube, BigBlueButton, Schoology, Blackboard, Saba Cloud, Thought Industries, Versal, Docebo LMS, SAP SuccessFactors, SkyPrep, Cornerstone OnDemand , PlayerLync, Brainier LMS, SyberWorks Training Center, PeopleFluent LMS, BlueVolt

Market Segmentation:

Segment by Type

Cloud-based

On Premise

Segment by Application

Public Schools

Private Schools

Training Institutions

Geographical Breakdown: Regional level analysis of the market, currently covering North America, Europe, China & Japan

In-Depth Qualitative Analyses Include Identification And Investigation Of The Following Aspects: Market Structure, Growth Drivers, Restraints and Challenges, Emerging Product Trends & Market Opportunities, Porter’s Fiver Forces. The report also inspects the financial standing of the leading companies, which includes gross profit, revenue generation, sales volume, sales revenue, manufacturing cost, individual growth rate, and other financial ratios. The report basically gives information about the Market trends, growth factors, limitations, opportunities, challenges, future forecasts, and details about all the key market players.

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Key questions answered: Study Explore COVID 19 Outbreak Impact Analysis

Market size and growth rate during forecast period. Key factors driving the Market. Key market trends cracking up the growth of the Market. Challenges to market growth. Key vendors of Market. Detailed SWOT analysis. Opportunities and threats faces by the existing vendors in Global Market. Trending factors influencing the market in the geographical regions. Strategic initiatives focusing the leading vendors. PEST analysis of the market in the five major regions.

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Key Points Covered in Virtual Classroom Software Market Report:

Chapter 1: Overview of Virtual Classroom Software Market: The Study Explore COVID 19 Outbreak Impact Analysis

• Definition

• Specifications

• Classification

• Applications

• Regions

Chapter 2: Market Competition by Players/Suppliers: Detailed Overview of COVID 19 Outbreak Impact Analysis

• Manufacturing Cost Structure

• Raw Material and Suppliers

• Manufacturing Process

• Industry Chain Structure

Chapter 3: Sales (Volume) and Revenue (Value) by Region: Detailed Overview of COVID 19 Outbreak Impact Analysis

• Sales

• Revenue and market share

Chapter 4, 5 and 6: Virtual Classroom Software Market by Type, Application & Players/Suppliers Profiles: Detailed Overview of COVID 19 Outbreak Impact Analysis

• Market Share by Type & Application

• Growth Rate by Type & Application

• Drivers and Opportunities

• Company Basic Information

Chapter 7, 8 and 9: Virtual Classroom Software Manufacturing Cost, Sourcing & Marketing Strategy Analysis: Detailed Overview of COVID 19 Outbreak Impact Analysis

• Key Raw Materials Analysis

• Upstream Raw Materials Sourcing

• Marketing Channel

Chapter 10 and 11: Virtual Classroom Software Market Effect Factors Analysis and Market Size (Value and Volume) Forecast: Detailed Overview of COVID 19 Outbreak Impact Analysis

• Technology Progress/Risk

• Sales Volume, Revenue Forecast (by Type, Application & Region)

Chapter 12, 13, 14 and 15: Virtual Classroom Software Market Research Findings and Conclusion, appendix and data source

• Methodology/Research Approach

• Data Source (Secondary Sources & Primary Sources)

• Market Size Estimation

……..and view more in complete table of Contents

Continued….

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Document ICROWDN020210413eh4d000ut

 

THE JOURNAL
OF ENGINEERING
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# Adobe Inc. Patent Issued for Position-Dependent Modification Of Descriptive Content In A Virtual Reality Environment (USPTO 10,949,057)

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29 March 2021
Journal of Engineering
JOENG
12317
English


2021 MAR 29 (VerticalNews) -- By a News Reporter-Staff News Editor at Journal of Engineering -- A patent by the inventors DiVerdi, Stephen (Oakland, CA); Walker, Seth (Oakland, CA); Williams, Brian (San Jose, CA), filed on April 14, 2020, was published online on March 29, 2021, according to news reporting originating from Alexandria, Virginia, by VerticalNews correspondents.

Patent number 10,949,057 is assigned to Adobe Inc. (San Jose, California, United States).

The following quote was obtained by the news editors from the background information supplied by the inventors: "Virtual reality ('VR') is becoming a ubiquitous part of daily computing environments. Advances in both hardware and software allow applications to more commonly include VR elements. However, user interface ('UI') controls in VR environments behave in ways that seem unexpected to a user who is unfamiliar with the VR environment. In addition, UI controls in a VR environment can change behavior based on the context of the control within the VR environment.

"A developer of a VR environment may provide information describing the function or behavior of UI controls in the VR environment, such as by displaying information adjacent to the control, providing help documentation, or providing a tutorial time period or area. However, the information can be provided in a manner that is inappropriate for a user's needs. For example, providing information describing each control in all contexts may clutter the VR environment and obscure the activity that the user is attempting to perform, frustrating the user and reducing the usefulness of the VR environment. In addition, a tutorial provides a limited area or time in which the UI controls are carefully explained to the user. However, a tutorial does not provide information in all areas or time periods of the VR environment. A user who is in a non-tutorial area or time period is unable to access helpful information if he or she is presented with a new context in the non-tutorial area or time period. Furthermore, providing information in help documentation can be distracting and time-consuming, as the user would need to move his or her attention away from the current activity in order to view the help documentation. In addition, it may be frustrating for a user to research an unfamiliar control or context in help documentation.

"It is desirable for information describing UI controls in a VR environment to be available in all contexts of the VR environment. In addition, it is desirable for such contextual information to be hidden until an indication is received from the user that contextual information is requested."

In addition to the background information obtained for this patent, VerticalNews journalists also obtained the inventors' summary information for this patent: "According to certain embodiments, a VR environment is modified to provide contextual information for an object in the VR environment, based on the object's position within the VR environment. The position of the object is determined within the VR environment. In addition, a position of the user's viewpoint within the VR environment is determined. A distance between the object position and the viewpoint position is determined, and compared to a threshold distance. In some cases, the threshold distance is modified by a hysteresis parameter. Based on the comparison of the distance between the object and the viewpoint to the threshold distance, the VR environment is modified to include contextual information for the object.

"In some cases, the VR environment is modified to provide contextual information for the object, based on the object's position at a particular location within the VR environment. The position of the object is determined within the VR environment, and compared to a previous position of the object. Based on a similarity between the position and the previous position, a cumulative amount of motion is determined, the cumulative motion indicating how much motion the object has in a window of time. The cumulative motion is compared to a threshold amount of motion. In some cases, the threshold amount of motion is modified by a hysteresis parameter. Based on the comparison of the cumulative motion to the threshold amount of motion, the VR environment is modified to include contextual information for the object.

 

"These illustrative embodiments are mentioned not to limit or define the disclosure, but to provide examples to aid understanding thereof. Additional embodiments are discussed in the Detailed Description, and further description is provided there."

The claims supplied by the inventors are:

"What is claimed is:

"1. A method of using one or more processing devices to provide information in a virtual reality (VR) environment, the method comprising: determining a first location associated with a user interface (UI) object in the VR environment and a second location associated with an additional object in the VR environment; determining that the first location is within a threshold distance from the second location; determining a previous location associated with the UI object in the VR environment within the threshold distance, the first location having a first timestamp that is subsequent to a previous timestamp of the previous location; calculating, based on a location difference between the first location and the previous location, a cumulative motion of the UI object while the UI object is within the threshold distance; and responsive to determining that the cumulative motion of the UI object while the UI object is within the threshold distance is less than or equal to a threshold amount of motion, modifying the VR environment to output information describing the additional object.

"2. The method of claim 1, wherein: modifying the VR environment includes outputting contextual information describing the UI object, and the contextual information describing the UI object comprises one or more of: a description of a function of the UI object, a description of an interaction type with the UI object, or a description of a context of the UI object.

"3. The method of claim 2, wherein a visual component of the contextual information is displayed adjacent to a described control on the UI object.

"4. The method of claim 1, wherein modifying the VR environment includes modifying an appearance of the additional object.

"5. The method of claim 1, wherein the output information describing the additional object includes one or more of visual information or audio information.

"6. The method of claim 1, wherein the threshold distance is adjusted by a hysteresis parameter, and wherein modifying the VR environment is further responsive to determining that the location difference between the first location and the previous location is within the adjusted threshold distance.

"7. The method of claim 1, further comprising: determining an additional distance between the first location and a viewpoint location associated with a viewpoint in the VR environment; and responsive to determining the additional distance, further modifying the VR environment to include additional information describing the UI object.

"8. The method of claim 7, wherein: the first location in the VR environment is determined based on a physical location of an input device associated with the UI object, and the viewpoint location in the VR environment is determined based on an additional physical location of an output device associated with the viewpoint.

"9. A system comprising: one or more processors; and one or more memory devices communicatively coupled to the one or more processors, the one or more memory devices storing instructions which, when executed by the one or more processors, cause the system to perform: determining a first location associated with a user interface (UI) object in a virtual reality (VR) environment and a second location associated with an additional object in the VR environment; determining that the first location is within a threshold distance from the second location; determining a previous location associated with the UI object in the VR environment within the threshold distance, the first location having a first timestamp that is subsequent to a previous timestamp of the previous location; calculating, based on a location difference between the first location and the previous location, a cumulative motion of the UI object while the UI object is within the threshold distance; and responsive to determining that the cumulative motion of the UI object while the UI object is within the threshold distance is less than or equal to a threshold amount of motion, modifying the VR environment to output information describing the additional object.

"10. The system of claim 9, wherein: modifying the VR environment includes outputting contextual information describing the UI object, and the contextual information describing the UI object comprises one or more of: a description of a function of the UI object, a description of an interaction type with the UI object, or a description of a context of the UI object.

"11. The system of claim 9, wherein modifying the VR environment includes modifying an appearance of the additional object.

 

"12. The system of claim 9, wherein the threshold distance is adjusted by a hysteresis parameter, and wherein modifying the VR environment is further responsive to determining that the location difference between the first location and the previous location is within the adjusted threshold distance.

"13. The system of claim 9, wherein the instructions cause the system to further perform: determining an additional distance between the first location and a viewpoint location associated with a viewpoint in the VR environment; and responsive to determining the additional distance, further modifying the VR environment to include additional information describing the UI object.

"14. The system of claim 13, wherein: the first location in the VR environment is determined based on a physical location of an input device associated with the UI object, and the viewpoint location in the VR environment is determined based on an additional physical location of an output device associated with the viewpoint.

"15. A non-transitory computer-readable medium embodying program code for providing information in a virtual reality (VR) environment, the program code comprising instructions which, when executed by a processor, cause the processor to perform operations comprising: determining a first position associated with a user interface (UI) object in the VR environment and a second position associated with an additional object in the VR environment, wherein the first position and the second position each include a respective object location and a respective object orientation; determining that the first position is within a threshold distance from the second position; determining a previous position associated with the UI object in the VR environment within the threshold distance, the first position having a first timestamp that is subsequent to a previous timestamp of the previous position; calculating, based on a position difference between the first position and the previous position, a cumulative motion of the UI object while the UI object is within the threshold distance; and responsive to determining that the cumulative motion of the UI object while the UI object is within the threshold distance is less than or equal to a threshold amount of motion, modifying the VR environment to include information describing the additional object.

"16. The non-transitory computer-readable medium of claim 15, wherein: modifying the VR environment includes outputting contextual information describing the UI object, and the contextual information describing the UI object comprises one or more of: a description of a function of the UI object, a description of an interaction type with the UI object, or a description of a context of the UI object.

"17. The non-transitory computer-readable medium of claim 15, wherein modifying the VR environment includes modifying an appearance of the additional object.

"18. The non-transitory computer-readable medium of claim 15, wherein the threshold distance is adjusted by a hysteresis parameter, and wherein modifying the VR environment is further responsive to determining that the position difference between the first position and the previous position is within the adjusted threshold distance.

"19. The non-transitory computer-readable medium of claim 15, the instructions causing the processor to perform operations further comprising: determining an additional distance between the first position and a viewpoint position associated with a viewpoint in the VR environment, wherein the viewpoint position includes an additional respective object location and an additional respective object orientation; and responsive to determining the additional distance, further modifying the VR environment to include additional information describing the UI object.

"20. The non-transitory computer-readable medium of claim 19, wherein: the first position in the VR environment is determined based on a physical location of an input device associated with the UI object, and the viewpoint position in the VR environment is determined based on an additional physical location of an output device associated with the viewpoint."

URL and more information on this patent, see: DiVerdi, Stephen; Walker, Seth; Williams, Brian. Position-Dependent Modification Of Descriptive Content In A Virtual Reality Environment. U.S. Patent Number 10,949,057, filed April 14, 2020, and published online on March 29, 2021. Patent URL: http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=10,949,057.PN.&OS=PN/10,949,057RS=PN/10,949,057

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ComputerWeekly

**Adobe Inc. Researchers Submit Patent Application, "Inverse Kinematic Solution Blending In Digital Character Animation", for Approval (USPTO 20210074050)**

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2021 MAR 31 (VerticalNews) -- By a News Reporter-Staff News Editor at Computer Weekly News -- From Washington, D.C., VerticalNews journalists report that a patent application by the inventors Saito, Jun (Seattle, WA); Acquavella, James (Seattle, WA); Werner, David (Pleasanton, CA), filed on October 26, 2020, was made available online on March 11, 2021.

The patent's assignee is Adobe Inc. (San Jose, California, United States).

News editors obtained the following quote from the background information supplied by the inventors: "Recent years have seen significant improvements in computer systems for generating digital character animations. For example, conventional digital animation systems can employ inverse kinematic models to render movements of animated characters in digital animations. To illustrate, conventional systems can utilize inverse kinematic models to help determine positions of joints over time and then render an animated character that simulates movement based on the determined joint positions. However, a number of problems exist with conventional animation systems particularly in relation to accuracy and efficiency of operation."

As a supplement to the background information on this patent application, VerticalNews correspondents also obtained the inventors' summary information for this patent application: "Aspects of the present disclosure address the foregoing and/or other problems in the art with methods, computer-readable media, and systems that intelligently blend inverse kinematic (hereafter 'IK') solutions to more naturally depict joint positioning and/or movement of digital animated characters. For example, in one or more embodiments, the disclosed systems can blend two IK solutions for an elbow joint based on a shoulder angle. Specifically, as the upper arm of an animated character moves down, the disclosed systems can incrementally blend multiple IK solutions, which pushes the elbow joint away from the body to help maintain a natural bend. In addition to generating a more accurate transitional bend angle of an animated character arm, this blending approach can produce a three-dimensional appearance by shortening the arm within a blending region. By intelligently blending two or more IK solutions within a blending region, the disclosed systems can efficiently generate smooth, accurate limb motions while reducing time and interactions needed to generate realistic two-dimensional animation sequences.

"To illustrate, in some embodiments, the disclosed systems identify a wrist position and a shoulder position of an animated character (e.g., in a particular frame of an animated sequence). In addition, the disclosed systems can determine, based on the wrist position and the shoulder position, a first IK solution of a first elbow position and a second IK solution of a second elbow position. Based on a shoulder angle of the animated character, the disclosed systems can determine a modified elbow position by blending the first IK solution and the second IK solution. Furthermore, in some embodiments, the disclosed systems may generate a representation of the animated character based on the wrist position, the shoulder position, and the modified elbow position.

"Additional features and advantages of one or more embodiments of the present disclosure are outlined in the description which follows, and in part will be obvious from the description, or may be learned by the practice of such example embodiments."

The claims supplied by the inventors are:

"1. A non-transitory computer-readable medium storing instructions that, when executed by at least one processor, cause a computing device to: determine a position of a first end of a first structural member of an animated character, a second end of the first structural member being connected to a first end of a second structural member by a joint; determine a position of a second end of the second structural member; determine, based on the position of the first end position of the first structural member and the position of the first end of the second structural member of the animated character, a first inverse kinematic solution of a first joint position and a second inverse kinematic solution of a second joint position; determine a modified joint position by blending the first inverse kinematic solution of the first joint position and the second inverse

 

kinematic solution of the second joint position according to blending weights determined based on an angle of the first structural member of the animated character; and generate a representation of the animated character based on the position of the first end of the first structural member, the position of the second end of the second structural member, and the modified joint position.

"2. The non-transitory computer-readable medium of claim 1, further comprising instructions that, when executed by the at least one processor, cause the computing device to identify the angle of the first structural member of the animated character by identifying an angle between a reference plane associated with the animated character and a line connecting the position of the first end of the first structural member with the first joint position or the second joint position.

"3. The non-transitory computer-readable medium of claim 1, further comprising instructions that, when executed by the at least one processor, cause the computing device to determine the modified joint position in response to determining that the angle of the first structural member of the animated character falls within a blending region.

"4. The non-transitory computer-readable medium of claim 3, wherein the blending region comprises a range of angles between a first angle and a second angle and further comprising instructions that, when executed by the at least one processor, cause the computing device to determine that the angle of the first structural member of the animated character falls within the blending region by determining that the angle of the first structural member is between the first angle and the second angle.

"5. The non-transitory computer-readable medium of claim 4, further comprising instructions that, when executed by the at least one processor, cause the computing device to determine the first angle and the second angle of the blending region by: identifying an angle limit of the first structural member indicating a central angle of the blending region; identifying a transition angle indicating an angle range relative to the angle of the first structural member limit; and determining the first angle and the second angle by applying the transition angle to the angle of the first structural member limit.

"6. The non-transitory computer-readable medium of claim 4, further comprising instructions that, when executed by the at least one processor, cause the computing device to generate the blending weights based on proximity of the angle of the first structural member relative to the first angle and the second angle.

"7. The non-transitory computer-readable medium of claim 6, further comprising instructions that, when executed by the at least one processor, cause the computing device to further generate the blending weights by applying a smooth step function to the first inverse kinematic solution of the first joint position and the second inverse kinematic solution of the second joint position based on the first angle, the second angle, and the angle of the first structural member.

"8. The non-transitory computer-readable medium of claim 1, wherein: the position of the first end of the first structural member comprises a shoulder position; the position of the second end of the second structural member comprises a wrist position; and the joint comprises an elbow.

"9. The non-transitory computer-readable medium of claim 8, wherein the animated character comprises an arm having an initial arm length and further comprising instructions that, when executed by the at least one processor, cause the computing device to generate the representation of the animated character based on the position of the second end of the second structural member, the position of the first end of the first structural member, and the modified joint position by generating a modified arm having a modified arm length shorter than the initial arm length.

"10. The non-transitory computer-readable medium of claim 8, further comprising instructions that, when executed by the at least one processor, cause the computing device to: associate a first art layer with a first orientation of an arm of the animated character and associate a second art layer with a second orientation of the arm of the animated character; determine a switch point within a blending region at which an angle of the first structural member of the animated character triggers a switch between the first art layer and the second art layer; and generate for display the first art layer or the second art layer by comparing the angle of the first structural member and the switch point.

"11. A system comprising: at least one memory device storing an animated character comprising a first structural member, a second structural member, and a joint connecting a second end of the first structural member to a first end of the second structural member; at least one processor configured to cause the system to: determine a position of a first end of the first structural member; determine a position of a second end of the second structural member; determine, based on the position of the first end of the first structural member and the position of the second end of the second structural member, a first inverse kinematic solution of a first joint position and a second inverse kinematic solution of a second joint position different from the first joint position; determine an angle of the first structural member based on the position of the first end of the first structural member and the first joint position or the second joint position; determine a modified

 

joint position by blending the first inverse kinematic solution of the first joint position and the second inverse kinematic solution of the second joint position according to blending weights determined based on the angle of the first structural member; and generate a representation of the animated character based on the position of the first end of the first structural member, the position of the second end of the second structural member, and the modified joint position.

"12. The system of claim 11, wherein the at least one processor is configured to cause the system generate the first inverse kinematic solution by constraining one or more of a length of the first structural member, a length of the second structural member, the position of the first end of the first structural member, or the position of the second end of the second structural member.

"13. The system of claim 11, wherein the at least one processor is configured to cause the system to generate the first inverse kinematic solution utilizing iterative optimization.

"14. The system of claim 11, wherein one or more of the first structural member or the second structural member is flexible.

"15. The system of claim 11, wherein: the first structural member comprises an upper arm; the second structural member comprises a lower arm; the position of the first end of the first structural member comprises a shoulder position; the position of the second end of the second structural member comprises a wrist position; and the joint comprises an elbow.

"16. A computer-implemented method comprising: identifying a user interaction to move one or more portions of an animated character in a two-dimensional digital animation; based on the user interaction, identifying a first joint position and a second joint position of the animated character; determining, based on the first joint position and the second joint position, a first inverse kinematic solution of a first middle joint position and a second inverse kinematic solution of a second middle joint position; generating the animated character having a blended middle joint position by blending the first inverse kinematic solution of the first middle joint position and the second inverse kinematic solution of the second middle joint position; and providing the animated character having the blended middle joint position for display as part of the two-dimensional digital animation.

"17. The computer-implemented method of claim 16, wherein: the first joint position includes a position of a first end of a first structural member of the animated character; and the second joint position includes a position of a second end of a second structural member of the animated character.

"18. The computer-implemented method of claim 16, wherein the blended middle joint position is spatially positioned between the first middle joint position and the second middle joint position.

"19. The computer-implemented method of claim 16, wherein the animated character comprises an arm having an initial arm length and the computer-implemented method further comprises generating the animated character based on the first joint position, the second joint position, and the blended middle joint position by generating a modified arm having a modified arm length different from the initial arm length.

"20. The computer-implemented method of claim 16, wherein: the first joint position comprises a shoulder position; the second joint position comprises a wrist position; and a middle joint position comprises an elbow position."

For additional information on this patent application, see: Saito, Jun; Acquavella, James; Werner, David. Inverse Kinematic Solution Blending In Digital Character Animation. Filed October 26, 2020 and posted March 11, 2021. Patent URL: http://appft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PG01&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.html&r=1&f=G&l=50&s1=%2220210074050%22.PGNR.&OS=DN/20210074050&RS=DN/20210074050

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