UNREAL FEST ONLINE 2020

Tuesday, July 14

	Architecture		Automotive		Games			Film, TV & live events		Cross-industry	
08:00 - 08:45 EDT **13:00 - 13:45 BST**	CREATING INTERACTIVE ARCHVIZ WALKTHROUGHS IN LESS THAN AN HOUR Epic Games	CRASH COURSE: AN INTRODUCTION TO TWINMOTION Epic Games	ACHIEVING HIGHER VISUAL FIDELITY WITH RAY TRACING Epic Games	EXPLORING THE FORD MUSTANG MACH-E: THE REAL-TIME FUTURE OF AUTOMOTIVE VISUALIZATION Burrows	UNREAL ENGINE FOR NEXT GEN GAMES Epic Games	OPTIMIZING AND BUILDING UI FOR AAA GAMES Rocksteady Studios	HARNESSING THE UNREAL ENGINE AUTOMATION FRAMEWORK FOR PERFORMANCE MEASUREMENT Dovetail Games	USING UNREAL ENGINE FOR LINEAR ANIMATION Epic Games	THE FUTURE OF REAL-TIME BROADCAST GRAPHICS Zero Density	CRASH COURSE: AN INTRODUCTION TO UNREAL ENGINE Epic Games	DIVING INTO NIAGARA: INTELLIGENT PARTICLE EFFECTS Epic Games
08:45 - 09:30 EDT **13:45 - 14:30 BST**	GAMIFICATION OF TRANSPORT AND INFRASTRUCTURE ENGINEERING ARUP	LANDSCAPE DESIGN WITH UNREAL ENGINE Heatherwick Studio	USING UNREAL FOR DESIGN REVIEWS PART 1: VARIANT MANAGER Epic Games	A DEEP DIVE INTO THE KEY COMPONENTS OF A PRODUCT CONFIGURATOR Audi Business Innovation GmbH	A DEEP DIVE INTO A CROSS-PLATFORM BUILD FARM Natural Motion	PORTING *THE SINKING CITY* TO NINTENDO SWITCH Frogwares	TECHNICAL ANIMATION CHALLENGES ON MOBILE TITLES Yager	WORK FROM HOME VIRTUAL PRODUCTION Matt Workman	REAL-TIME CONTROL OF SPECIAL EFFECTS HARDWARE THROUGH UNREAL ENGINE Geodesic Games	QUIXEL MIXER WORKFLOW AND APPLYING MEGASCANS IN A VIRTUAL WORLD Epic Games	HOW TO USE BLENDER WITH UNREAL ENGINE Epic Games
15-MINUTE BREAK											
09:45 - 10:30 EDT **14:45 - 15:30 BST**	USING THE DATAPREP SYSTEM TO AUTOMATE AEC VISUALIZATIONS Epic Games	TRANSFORMING ARCHVIZ AT KPF WITH UNREAL ENGINE AND TWINMOTION 2020 Kohn Pedersen Fox Associates (KPF)	AUTOMOTIVE MARKETING: QUICKLY EDIT YOUR 3D SCENE AND GENERATE HIGH-RES RENDERS Epic Games	A FULLY IMMERSIVE DRIVING SIMULATOR FOR AUTONOMOUS VEHICLES Warwick Manufacturing Group	THE EVOLUTION OF REAL-TIME VFX WITH UNREAL ENGINE'S NIAGARA Epic Games	MAKE IT FAST: SIMULTANEOUS AI ACTIONS IN *GEARS TACTICS* Splash Damage	CI/CD INFRASTRUCTURE FOR EFFICIENT MOBILE GAME DEVELOPMENT Pushkin Studio (MY.GAMES)	USING UNREAL ENGINE FOR TELEVISION PRODUCTION Epic Games	IMMERSIVE CINEMA EXPERIENCES WITH UNREAL ENGINE Reactic	COLLECT, ANALYZE, AND VISUALIZE YOUR DATA WITH UNREAL INSIGHTS Epic Games	EXPLORING THE DEPTHS OF THE NEW SKY & ATMOSPHERE SYSTEM Epic Games
10:30 - 11:15 EDT **15:30 - 16:15 BST**	HOW UNREAL ENGINE WAS USED IN THE DESIGN OF THE WORLD'S MOST ADVANCED RESEARCH FACILITY FOR NEUTRON SCIENCE AFRY	BIM-INTEGRATED VR WITH UNREAL ENGINE formitas AG	AUTOMOTIVE AND HEALTHCARE: COMMUNICATING COMPLEX IDEAS THROUGH IMMERSIVE TECHNOLOGY Cassette	ELASTIC CONTENT: DISRUPTING THE CONTENT INDUSTRY WITH THE POWER OF REAL-TIME RENDERING MHP	CRASH COURSE IN DIGITAL AUDIO Epic Games	BENEFITS AND PITFALLS OF USING THE GAMEPLAY ABILITY SYSTEM Flying Wild Hog	SPEEDING UP GAME LOGIC IN UNREAL ENGINE Funcom	THE MAKING OF *HIS DARK MATERIALS* Painting Practice	EXTERNAL CONTROL OF UNREAL ENGINE FOR LIVE EVENTS Epic Games	BUILDING ADVANCED EFFECTS IN NIAGARA WITH UNREAL ENGINE Epic Games	BUILDING NATURAL ENVIRONMENTS IN UNREAL ENGINE Epic Games
11:15 - 12:00 EDT **16:15 - 17:00 BST**	REAL-TIME RAY TRACING FOR ARCHITECTURAL VISUALIZATION Epic Games	HOW TWINMOTION IS DEMOCRATIZING VISUALIZATION AT CANNONDESIGN CannonDesign	USING UNREAL FOR DESIGN REVIEWS PART 2: THE PRODUCT CONFIGURATOR TEMPLATE Epic Games		BUILDING WORLDS IN FORTNITE WITH UNREAL ENGINE Epic Games	DEVELOPING AI IN RACING GAMES USING REINFORCEMENT LEARNING Milestone	CAPTURING THE REALITY OF SPACE WITH RAY TRACING IN *DELIVER US THE MOON* KeokeN Interactive	IPHONE FACIAL CAPTURE WITH UNREAL ENGINE Epic Games	BOOTSTRAPPING LIVE-ACTION REAL-TIME IN-CAMERA VFX FOR INDIE FILMMAKERS Treehouse Digital	APPLYING FOR AN EPIC MEGAGRANT: MAKE YOUR SUBMISSION STAND OUT Epic Games	USING UNREAL ENGINE IN SIMULATION APPLICATIONS Epic Games

Unreal Fest Online runs several sessions concurrently for each timeslot. Select the industry track that most interests you, and then select which option you prefer for each timeslot. You can even mix and match tracks, or swap sessions in the middle. It's entirely up to you!

Each session runs for 45 minutes and includes a live Q&A; there's also a networking lounge where you can hang out with each other and with Epic employees during the event hours. Once you register, you'll be able to build a personalized agenda a day in advance of the event. Not able to fit in all the sessions you want? Don't worry—they'll all be available on demand as soon as they've aired.

REGISTER NOW

LOG IN

Architecture

08:00 - 08:45 EDT

13:00 - 13:45 BST

Creating Interactive Archviz Walkthroughs in Less Than an Hour

In this session, attendees will learn how to create interactive archviz walkthroughs in Unreal Engine, straight out of the box.

After diving into some industry examples, the session will cover the four basic steps to create content in the engine; two different ways to import data from any CAD or 3D software; how to get started with lighting in Unreal Engine in just a couple of clicks; an introduction to the engine's powerful Material Editor; and how to start walking around your design in VR in less than an hour.

Great for: architects, landscape architects, urban designers, master planners, visualizers, and archviz artists who are beginners in Unreal Engine.

Fabrice Bourrelly
Architectural Visualization Designer, Epic Games

Crash Course: An Introduction to Twinmotion

Attendees at this session will learn how to import 3D content into Twinmotion—a fast and easy real-time visualization tool built on Unreal Engine. They will then find out how to enhance a project using Twinmotion's built-in tools and assets, including PBR Materials and lighting. And finally, they'll learn how to show off designs with images, panoramas, videos, or BIMmotion files.

Great for: archviz designers who have some knowledge of 3D content creation using apps like SketchUp, Revit, or 3ds Max.

Amer Yassine
Curriculum Developer, Epic Games

08:45 - 09:30 EDT

13:45 - 14:30 BST

Gamification of Transport and Infrastructure Engineering

In this session, James Jackson and Colin Hanford will show how their team has been able to deliver high-quality interactive products using Unreal Engine's toolset, with no prior experience in game development.

They'll explain how enabling designers and stakeholders to experience designs in this way has stimulated engagement and enabled key conversations to happen, improving outcomes as a result. Attendees will also learn how that same immediacy of interaction has driven further development of features within ARUP's products.

Great for: professionals in the AEC industry, design engineers, visualizers, and simulation developers.

James Jackson
3D Visualisation Designer, ARUP

Colin Hanford
Senior 3D Visualiser, ARUP

Landscape Design with Unreal Engine

Project visualizations have played an increasingly important role in the development of projects in the construction industry. In this session, Deyan Saev and Alberto Dominguez of Heatherwick Studio will provide an insight on the evolution of the studio's approach to visualization with a focus on the role of landscape design and the use of Unreal Engine within its design process and workflow.

The session will provide an overview of the studio's project design development approach, the customization of Unreal Engine for Heatherwick's design process, the engine as a tool for planting design development and exploration, and the studio's current explorations in visualization tools and workflows.

Great for: architects, landscape architects, urban designers, master planners, visualizers.

Deyan Saev
Architect | Visualisations Specialist,
Heatherwick Studio

Alberto Dominguez
Senior Designer | Landscape Architect CMLI,
Heatherwick Studio

15-minute break

Architecture

09:45 - 10:30 EDT

14:45 - 15:30 BST

Using the Dataprep System to Automate AEC Visualizations

This session will dive into the use of the Dataprep system to automate the creation of interactive models with Unreal Engine.

Attendees will get to grips with the Dataprep system in an architectural visualization context, learning to batch export/import BIM models or data from Revit and create custom Dataprep operators with Blueprints.

Great for: design visualization specialists who are importing data from various sources such as Rhino, Revit, and 3ds Max.

Tom Shannon
Technical Artist, Epic Games

Transforming archviz at KPF with Unreal Engine and Twinmotion 2020

In this session, Kohn Pedersen Fox Associates (KPF) will discuss how real-time technology is becoming a more integral part of its architectural practice. Cobus Bothma, Director of Applied Research, will explain how Twinmotion 2020 is being adopted and used on projects throughout the firm. He will also discuss the future of real-time technology and how KPF hopes to integrate Twinmotion with Unreal Engine.

Next, Ayman Tawfeeq, an architectural designer at KPF, will present several scenes he created in Twinmotion and discuss how the toolset is transforming client communication and enhancing design workflow.

Great for: beginner to intermediate architects, designers, and visualizers.

Cobus Bothma
Director of Applied Research, KPF

Ayman Tawfeeq
Architectural Designer, KPF

10:30 - 11:15 EDT

15:30 - 16:15 BST

How Unreal Engine was Used in the Design of the World's Most Advanced Research Facility for Neutron Science

European Spallation Source (ESS) is the world's most advanced and first sustainable research facility for neutron science located in the southern part of Sweden. It is set to be up and running in 2025.

In this session, Marcus Helmback will cover how Unreal Engine was used on the consultancy's ESS project as a tool for reviewing designs in VR and for visualizing the future facility.

Attendees of this session will walk away with an understanding of how Unreal Engine could be used for streamlining workflows that use BIM-models for visualization and virtual reality, as well as the benefits of using Unreal Engine as a tool for creating interactive models for different purposes.

Great for: people in the AEC industry working with BIM and visualization/VR

Marcus Helmback
BIM-strategist | VR-Specialist, AFRY

BIM-integrated VR with Unreal Engine

In this session, Gerrit Hoppe will dive into the challenges around establishing a new technology in a conservative field, looking at how quickly Unreal Engine enables teams to tackle specific project pains communicatively.

He'll go on to demonstrate how early adopting clients have had immediate gratification from integrating new possibilities into running projects, and reveal how exploration of these challenges led to the development of a new tool, powered by Unreal Engine, that has made it possible to connect real-time VR walkthroughs with the iterative BIM process cycle via BCF, and how this benefits all stakeholders of the project.

Great for: AEC stakeholders, architects, construction engineers and real-time visualizers.

Gerrit Hoppe
Head of VR | BIM Management, formitas AG

11:15 - 12:00 EDT

16:15 - 17:00 BST

Real-time Ray Tracing for Architectural Visualization

This session will focus on the particularities of ray tracing interior and exterior archviz scenes.

Attendees will get an in-depth look at how the Archviz Interior Rendering sample has been configured to produce high-quality cinematics.

Great for: design viz specialists who are interested in using Unreal Engine with ray tracing for archviz.

Matt Doyle
Technical Marketing Specialist, Epic Games

How Twinmotion is democratizing visualization at CannonDesign

In this talk, CannonDesign's Director of Visualization, Ernesto Pacheco and Project Designer and Architect, Ryan Pietrowski, will explain how the firm leverages real-time rendering using Twinmotion to enhance design communication.

Ernesto and Ryan will provide an insight into the challenges CannonDesign faced during its initial adoption of the platform, and reveal the workflow and internal training at the company, as well as how Twinmotion is currently being implemented in production work. Attendees will leave the session with an in-depth understanding of best practices for AEC visualization, from still rendering and animation to VR deployment.

Great for: beginner to intermediate AEC professionals and students.

Ernesto Pacheco
Director of Visualization, CannonDesign

Ryan Pietrowski
Project Designer and Architect, CannonDesign

Automotive

08:00 - 08:45 EDT

13:00 - 13:45 BST

Achieving Higher Visual Fidelity with Ray Tracing

Ray tracing in Unreal Engine 4.25 continues to push the boundaries of photorealism in real-time environments. In this automotive-focused session, attendees will learn how to use the engine's hybrid Ray Tracer to balance and tune visual fidelity vs performance and frame rate perfectly to their needs.

The talk will cover best practices for setting up HDRI lighting, working with shadows, optimizing Materials, and using CVARs to tune performance. Additionally, attendees will be introduced to the new Movie Render Manager that produces higher-quality rendered output with a streamlined workflow.

Great for: beginner to intermediate industrial design professionals.

Daryl Obert
Senior Marketing Manager, Epic Games

Exploring the Ford Mustang Mach-E: the Real-Time Future of Automotive Visualization

In this session, Ben Walker, Robin Lowry, Torenne Chin, and Julian Fraser will explore how the company built a real-time product visualizer for the launch of Ford's new all-electric SUV, the Mustang Mach-E.

With a long history in pre-rendered CGI going back over 20 years, Robin, Ben, Torenne, and Julian will draw on their experience to talk about the challenges facing a CGI studio looking to move towards real-time technology and also the benefits it brings to traditional workflows.

Great for: enterprise customers, visualization artists, animators, traditional pre-rendered workflow users.

Ben Walker
Head of 3D, Burrows

Robin Lowry
Head of Product Visualisation, Burrows

Torenne Chin
CGI Real-Time Supervisor, Burrows

Julian Fraser
Group Account Director, Burrows

08:45 - 09:30 EDT

13:45 - 14:30 BST

Using Unreal for Design Reviews Part 1: Variant Manager

A typical automotive design review is all about gathering data from multiple departments and presenting them together in an enticing way in a short amount of time.

This talk will demonstrate where Unreal Engine fits into this workflow. We will dive into how to use the Variant Manager to manage a 150% vehicle model, enabling all of a car's possible options to be configured.

Great for: beginner to intermediate industrial design professionals.

Pablo Selener
Technical Account Manager, Epic Games

A Deep Dive into the Key Components of a Product Configurator

In this session, Dominic Bauer-Weidinger, Lead Developer at Audi Business Innovation GmbH, will look at the key components of product viewers, configurators, and showrooms for enterprise use cases.

He'll go through each component and see what you get out of the box from Unreal Engine, as well as what you have to create on your own. At the end of the talk, Dominic will open the floor for an open discussion about product viewers and configurators in general.

Great for: enterprise clients and developers, automotive professionals, and architects.

Dominic Bauer-Weidinger
Lead Developer, Audi Business Innovation GmbH

15-minute break

Automotive

09:45 - 10:30 EDT

14:45 - 15:30 BST

Automotive Marketing: Edit Your 3D Scene and Generate High-Res Renders

In this talk by Technical Account Managers Flavien Picon and Florian Dirmhirn, attendees will discover two key Unreal Engine features that will change the way they create high-resolution stills and videos.

Learn how to edit geometry while staying in the engine, and how to use the new tools in Unreal Engine 4.25 for high-quality media output.

Great for: industrial design and marketing professionals and students.

Flavien Picon
Technical Account Manager, Epic Games

Florian Dirmhirn
Technical Account Manager, Epic Games

A Fully Immersive Driving Simulator for Autonomous Vehicles

In this session, Juan Espineira, Project Engineer at Warwick Manufacturing Group, will go over how the company is using Unreal Engine to create a fully immersive driving experience in its 360 drive-in 3xD simulator and how this is being used to develop and test autonomous vehicles.

Juan will explain the architecture of the simulation system, covering the use of the nDisplay plugin to project to a 360 screen and a TCP plugin to communicate data to hardware and the autonomous vehicle, and show some examples of sensor models built on Unreal Engine, together with some projects that the system is being used on currently.

Great for: people involved in the development of autonomous vehicles and driving simulation.

Juan Espineira
Project Engineer, Warwick Manufacturing Group

10:30 - 11:15 EDT

15:30 - 16:15 BST

Automotive and Healthcare: Communicating Complex Ideas Through Immersive Technology

Immersive technology is changing the way we learn and communicate, so how can we navigate the seemingly endless possibilities to solve the challenges facing industries like automotive and health care today?

In this session, Dan Chapman, Technical Director at Cassette, will look at a series of case studies that provide concrete examples of how immersive and real-time technology is already being used in non-games industries to raise awareness and drive positive behavior change, while exploring the methods used to ensure their effectiveness.

Great for: educators and those involved in workforce training, professionals in marketing, communications, automotive and healthcare, and VR enthusiasts.

Dan Chapman
Technical Director, Cassette

Elastic Content: Disrupting the Content Industry with the Power of Real-Time Rendering

Dreaming of an engaging and personalized product experience delivered on demand and in real time? Wake up! It´s already here.

In this talk, Stephan Baier will explain how RT3D transforms static content into channel-independent product experiences which are setting new benchmarks in personalization and visual quality.

Great for: marketing, sales, business executives, and decision makers.

Stephan Baier
Head of Immersive Experience, MHP

11:15 - 12:00 EDT

16:15 - 17:00 BST

Using Unreal for Design Reviews Part 2: The Product Configurator Template

A typical automotive design review is all about gathering data from multiple departments and presenting them together in an enticing way in a short amount of time.

This talk is a follow up to *Part I: The Variant Manager*. Here we will create variant rules with Blueprint visual scripting, and then bring our project into the new UE4.25 Product Configurator Template. Lastly, we will show you how you can package and distribute design reviews to anyone in your organization.

Great for: beginner to intermediate industrial design professionals.

Pablo Selener
Technical Account Manager, Epic Games

Games

08:00 - 08:45 EDT

13:00 - 13:45 BST

Unreal Engine for Next-Gen Games

In this presentation, Nick Penwarden, VP of Engineering, and Marcus Wassmer, Engineering Director, cover the features in Unreal Engine that will be crucial to the success of developing the next generation of games, and reveal innovative features being developed that will revolutionize game development.

Then, Jerome Platteaux, Art Director, provides an in-depth look at how Epic created the "Lumen in the Land of Nanite" UE5 demo.

Great for: All existing and potential users of Unreal Engine

Part 1:

Nick Penwarden
VP of Engineering, Epic Games

Marcus Wassmer
Engineering Director, Epic Games

Part 2:

Jerome Platteaux
Art Director, Epic Games

Optimizing and Building UI for AAA Games

Why is UI always a performance issue? This session covers the questions that engine teams often ask.

Carey Hickling will go through the parts of the Unreal Frame responsible for UI, providing a deep dive into the various UI components and explaining what happens in each part. He'll talk about how you can optimize these and how Rocksteady used SMeshWidget to talk directly to the RHIRenderer; a technique to make a game-specific UI for complex widgets. Next, he'll explain how to use this to create particle systems and other advanced VFX, and he'll wrap up by revealing what you can do quickly and what you can achieve with more investment.

Great for: programmers, those working in UI and engine code, and anyone responsible for optimization.

Carey Hickling
UI Lead, Rocksteady Studios

Harnessing the Unreal Engine Automation Framework for Performance Measurement

In this session, Jonathan Quinn and Jonas Nelson will explore Dovetail Games' approach to automation within Unreal Engine for performance measurement and analysis. Using the Unreal Engine Automation Testing Framework, the studio has built tools to build, deploy, run, and analyze performance in its Fishing Sim World franchise.

They'll look at integration and maintenance of the framework, discuss their approach to performance validation, and explore data aggregation and dashboard presentation. Finally, they'll look at scalability and their current work on migration to Gauntlet.

Great for: programmers interested in automation testing, producers interested in stable delivery and studio efficiency, anyone in QA.

Jonathan Quinn
Technical Director, Dovetail Games

Jonas Nelson
Senior Engineer, Dovetail Games

08:45 - 09:30 EDT

13:45 - 14:30 BST

A Deep Dive into a Cross-Platform Build Farm

In this session, Ardrian Hardjono and Chris Carr will talk about the work NaturalMotion's DevOps team has done to ensure developer and QA workflows remain as fast as possible in the face of a multitude of build targets.

They will discuss how they implement multi-platform pipeline builds, how they distribute builds across on-premises and cloud-based build farms—and how they apply on-demand scaling to infrastructure for busy periods. They'll also dive into how unit tests, static analysis, and Blueprint validation forms part of their automated pipeline. Finally, they'll explain how they make builds more resistant to failure, and how they use metrics to identify build system bottlenecks.

Great for: software engineers and build engineers.

Ardrian Hardjono
Senior Software Engineer, NaturalMotion

Chris Carr
Principal Programmer, NaturalMotion

Porting *The Sinking City* to Nintendo Switch™

In this session, Konstantin Yakushenko, Developer Team Lead at Frogwares, will explore what it took to bring open-world PS4 and XI game *The Sinking City* to the Nintendo Switch™ platform.

Konstantin will dive into the different content optimization processes required to fit the game into a portable system, as well as practical methods of porting PS4/XI/PC open-world games to Nintendo Switch™.

Great for: developers and tech artists.

Konstantin Yakushenko
Developers Team Lead, Frogwares

Technical Animation Challenges on Mobile Titles

Working on a mobile title brings a number of technical animation challenges. In this session, Bogdan Diaconu will dive into Yager's work on an upcoming mobile title and explain how they were able to overcome those challenges using Unreal Engine's out-of-the-box tools.

He'll explain how the studio found a way to overcome the issue of low bone-count limits for skeletal meshes on mobile, and talk about the challenges the team faced when they wanted to reuse animations. And he'll go into the procedural animations required for characters with extras such as backpacks and holstered weapons.

Great for: people starting a mobile project who are interested in the technical animation challenges of the platform.

Bogdan Diaconu
Senior Technical Animator, Yager

15-minute break

Games

09:45 - 10:30 EDT
14:45 - 15:30 BST

The Evolution of Real-Time VFX with Unreal Engine's Niagara

In this talk, Wyeth Johnson, Technical Art Director, takes a deep look into the next phase of development and innovation on Unreal Engine's new programmable real-time VFX tool, Niagara.

He'll demonstrate how the tool has been production tested in the complex ecosystem of Fortnite, where it was used to deliver polished VFX, and reveal what the future holds, with new innovations and features in simulation, rendering, scalability, and user interface.

Great for: visual effects artists, technical artists, and rendering and tool programmers.

Wyeth Johnson
Technical Art Director, Epic Games

Make It Fast: Simultaneous AI Actions in *Gears Tactics*

In this session, Matthias Siemonsmeier will talk about *Gears Tactics*' AI system and how it was built to facilitate fast enemy turns while preserving clarity for the player, to enable a high kill count, and to pose tough but solvable challenges.

He will explore how combining proven systems like behavior trees and goal planners with a "Combo Move" system and extensive preplanning of actions enabled the team to achieve this. The talk will focus on high-level decision making and will describe the underlying system that enabled Splash Damage to make it possible for multiple units to execute actions at the same time without losing clarity for the player.

Great for: gameplay/AI programmers and AI system designers.

Matthias Siemonsmeier
Lead AI Programmer, Splash Damage

CI/CD Infrastructure for Efficient Mobile Game Development

CI/CD systems are commonly used in Unreal Engine for the building and packaging of game clients. In this session, Vladimir Alyamkin will explain why there are many more routine tasks that can—and should—be automated with CI/CD. These include asset validation checks, AI-based level tests for QA teams, and even game patch build and delivery to production environments.

He'll explore why it's not just about time saving, but also about finding ways to minimize the effect of human error on the development workflow. The session will include production-proven scenarios and CI/CD usage examples based on two large-scale mobile multiplayer game development experiences, and also cover comparison of most popular and well-known CI/CD systems suitable for use with Unreal Engine.

Great for: DevOps, technical team leaders, and QAs.

Vladimir Alyamkin
Tech Lead, Pushkin Studio (MY.GAMES)

10:30 - 11:15 EDT
15:30 - 16:15 BST

Crash Course in Digital Audio

This session will provide an introduction to key audio concepts that are fundamental to understanding how audio works in computers and games.

Concepts will be presented clearly with live demonstrations and examples in Unreal Engine, and immediately applied to various features and tools in the native audio engine. At the talk's conclusion, attendees will be able to navigate their way through the audio engine features with more confidence and understanding.

Great for: Game developers who are interested in audio but who have little to no experience in audio.

Aaron McLeran
Lead Audio Programmer, Epic Games

Benefits and Pitfalls of Using Gameplay Abilities Framework

The Gameplay Ability System in Unreal Engine helps to deliver gameplay functionalities and quickly iterate over prototypes. It is a robust framework, but many developers rely on trial and error to use it effectively within gameplay architecture.

In this talk, Mateusz Buda will share his experience of using the Gameplay Ability System in ongoing projects, and how Flying Wild Hog uses almost all elements of the framework across all of its gameplay systems. He'll also show examples of challenges that Flying Wild Hog were able to overcome in very little time using Gameplay Tags and Abilities, and talk about the studio's learnings along the way.

Great for: gameplay programmers and designers.

Mateusz Buda
Senior Gameplay Programmer, Flying Wild Hog

Speeding up Game Logic in Unreal Engine

In large-scale multiplayer titles where there are a considerable number of actors and components that need to be updated, game logic can quickly become the bottleneck. This is especially true server side and on performance-limited platforms.

In this session, Daniel Rätzer will present an approach to writing game code that increases data and instruction cache coherency, as well as allowing for automatic parallelization to maximize thread occupancy. Daniel will talk about ECS in general, and how Funcom implemented a scheduler which extends on the taskgraph and that can dispatch and batch process game logic on sets of components.

Great for: engine and game programmers working on titles where the game thread is the bottleneck.

Daniel Rätzer
Senior Engine Programmer, Funcom

11:15 - 12:00 EDT
16:15 - 17:00 BST

Building Worlds in Fortnite With Unreal Engine

This talk covers how the Fortnite team at Epic Games used the new and updated worldbuilding tools in Unreal Engine to create Chapter 2 of the chart-topping game.

Tools covered include the layered landscape system, custom brushes for procedurally editing height fields, scattering tools, grid-based streaming levels, and an early view of the water bodies system.

Great for: artists and designers building worlds in Unreal Engine.

Ryan Brucks
Principal Technical Artist, Epic Games

Developing AI in Racing Games Using Reinforcement Learning

Reinforcement learning is about to radically change the development process of AI in video games. In this session, Giuseppe Campana will introduce reinforcement learning from a pragmatic point of view. He'll dive deep into the infrastructure Milestone is developing to produce the AI for its racing games, and show how the studio's plugin integrates smoothly with Unreal Engine.

Giuseppe will explain how Milestone exploits class reflection for analysis and production tools, and how it runs training in a custom minimal game loop.

Great for: game programmers/designers curious about reinforcement learning (no prior knowledge of machine learning is required).

Giuseppe Campana
Lead Machine Learning Programmer, Milestone

Capturing the Reality of Space with Ray Tracing in *Deliver Us The Moon*

With the latest versions of Unreal Engine supporting real-time ray tracing, realistic lighting and cinematic visuals are now available to all developers. In this session, KeokeN Interactive CEO Koen Deetman and Technical Artist Daniel Torkar shed some light on the application of RTX in *Deliver Us The Moon*—the world's first Unreal Engine game to support this novel technology—and share tips and practical insights along the way.

Attendees will learn about important considerations to take into account when using real-time ray-tracing, performance tips, materials, focus points, and challenges.

Great for: programmers, technical artists, and artists.

Koen Deetman
CEO, KeokeN Interactive

Daniel Torkar
Lead Technical Artist, KeokeN Interactive

Film, TV & live events

08:00 - 08:45 EDT

13:00 - 13:45 BST

Using Unreal Engine for Linear Animation

The animation pipeline in Unreal Engine is opening new doors to virtual production, performance capture, animation, and immersive XR experiences.

This session will explore the pipeline in detail, providing an overview of the engine's core animation tools. Learn about animating in Sequencer, applying additive animations, editing with curves, and creating vertex animation in Materials.

Great for: animators, game developers, instructors, directors, and anyone who wants to create linear animations.

Tony Bowren
Technical Artist - Developer Relations, Epic Games

The Future of Real-time Broadcast Graphics

In this session, Faraz Qayyum, Technical Artist at Zero Density will dive into the use of Unreal Engine, across a range of broadcast scenarios, from green screen virtual set productions to on-screen CG.

He'll explore the benefits of node-based logic development using Blueprints at the backend of real-time graphics, and how this is different from conventional hard-coded and hierarchy-based systems, He'll specifically demonstrate unconventional use of UMG (Widget Blueprint) to design CG's Overlays and TV channel brandings i.e Lowerthirds, split screens or tickers.

Attendees will learn about the advantages of visual programming for non-programmers, object-oriented approaches to designing graphics templates, and the benefits of using Unreal Engine in a broadcast environment.

Great for: broadcast designers and motion graphics artists.

Faraz Qayyum
Technical Artist, Zero Density

08:45 - 09:30 EDT

13:45 - 14:30 BST

Work From Home Virtual Production

In this session, Cinematographer and Developer Matt Workman will break down how he used a mix of real-world camera equipment and 3D knowledge in Unreal Engine to set up an indie virtual production studio in his house.

He'll also deliver insights into his remote collaboration workflows.

Great for: live-action filmmakers and VFX/3D artists looking to get into virtual production.

Matt Workman
Cinematographer and Developer

Real-Time Control of Special Effects Hardware Through Unreal Engine

In this session, Geodesic Games' Kristof Klipfel, CEO and Dennis Dubinin, CTO, will go through all the important information users need to know in order to get started with real-time lighting control in Unreal Engine. They will also discuss the ins and outs of DMX hardware and software, and how hardware control will open up countless further opportunities in the virtual production and live performance industries in the future.

Additionally, attendees will get valuable insight into how they can bring DMX control into their current virtual production workflows.

Great for: anyone interested in learning how to make their content more immersive through physical hardware control; this includes creators of live entertainment and immersive/multimedia experiences and users of virtual production tools.

Kristof Klipfel
CEO, Geodesic Games

Dennis Dubinin
CTO, Geodesic Games

15-minute break

Film, TV & live events

09:45 - 10:30 EDT

14:45 - 15:30 BST

Using Unreal Engine for Television Production

This session will provide a look at various real-time workflows for television production. Attendees will learn about setting up the Media Framework for video playback, codec support, using the new Movie Render Queue, and the new 3D Text options. The talk will also address a broad range of topics related to motion graphics that fall outside of virtual production pipelines.

This talk is aimed at those with intermediate Blueprint skills.

Great for: graphic artists and content creators who work with motion graphics for television production, broadcast, and live events.

Patrick Wambold
Technical Account Manager, Epic Games

Immersive Cinema Experiences with Unreal Engine

In this session, Alexandre Piedade, Director at Reactic, will discuss his immersive 360º historical film *Saint Cross*. He'll explain the choice to use three projector screens with complementary footage—not just colors—along with the hardware challenges of using three projectors in 4K HDR with 5.1 surround sound.

Using Unreal Engine, Alexandre will show the technical setup for aligning three different cameras to achieve an immersive scene, from how FOV and camera lens have to be calibrated on all three to get a perfect sync, to a custom setup of Sequencer to export renders. He will also share a sneak peek of *Saint Cross* with attendees, which is set for high-fidelity screenings at movie theaters in 2020.

Great for: videographers, photographers, cinematographers, filmmakers, directors, producers, modelers, animators, editors, sound engineers, and theater technicians.

Alexandre Piedade
Director, Reactic

10:30 - 11:15 EDT

15:30 - 16:15 BST

The Making of *His Dark Materials*

In this session, Dan May, Co-Founder at Painting Practice, will explain how Unreal Engine was used for the production of the TV show *His Dark Materials*, focusing in particular on how the engine helped the team transition from a traditional production pipeline to using virtual production tools.

He will delve into the reasons the studio chose Unreal Engine for the production, with a focus on its VR and game-creation capabilities. He'll explain how Painting Practice developed its own app Plan V using Unreal Engine—a production tool that allows production staff to remotely explore 3D environments alongside typical previsualization materials.

Great for: film professionals and people with an interest in the filmmaking process.

Dan May
Co-Founder, Painting Practice

External Control of Unreal Engine for Live Events

In this session, attendees will find out how to control various aspects of Unreal Engine with a focus on control protocols used in live event production.

Features covered will include MIDI, basic Editor Utility Widgets with UMG, and working in Sequencer with timecode.

Great for: graphic artists and content creators who work with motion graphics for television production, broadcast, and live events.

Patrick Wambold
Technical Account Manager, Epic Games

11:15 - 12:00 EDT

16:15 - 17:00 BST

iPhone Facial Capture with Unreal Engine

The iPhone's True Depth camera and ARKit are powerful tools that enable virtual production-ready facial animation in real time thanks to Epic Games' new iOS app, Live Link Face for Unreal Engine. This talk will demonstrate how the app can stream high-quality expressions to characters in Unreal Engine via Live Link. It will also touch on more advanced topics for virtual production such as multicast networking for Unreal Engine multi-user workflows, timecode support for synchronization, remote control with OSC, and data management for recordings.

Great for: animators, filmmakers, anyone interested in performance capture and virtual production.

Ryan Mayeda
Virtual Production Program Manager, Epic Games,

Bootstrapping Live-Action Real-Time In-Camera VFX for Indie Filmmakers

After seeing Epic's collaborative LED Virtual Production demonstration, Paul Hamblin, a partner at indie production company Treehouse Digital, thought "how do we do this on a tight budget?"

Three months later, using one gaming PC, a Vive puck, Unreal Engine, and the kindness of an LED company, his team were filming a car crash that would have taken months of planning and VFX to execute in any other way.

In this session, he'll discuss learnings from that project, including how to plan an LED shoot; how to discover your minimum kit requirements; the power of "in camera"; how to work with a director to find creative solutions to problems; the benefits of real-time rendering; why this technology is going to change filmmaking for the better; and how it's possible on a small budget.

Great for: filmmakers, VFX artists, video professionals.

Paul Hamblin
Head of Ops & Virtual Production, Treehouse Digital

Cross-industry

08:00 - 08:45 EDT

13:00 - 13:45 BST

Crash Course: An Introduction to Unreal Engine

Unreal Engine usage is growing in leaps and bounds across a wide range of industries. This crash course will provide examples of how businesses are creating stunning real-time visuals for film, television, theater, architecture, design, and manufacturing.

The session will provide a high-level understanding of game engine principles along with an overview of the Unreal Editor and its various tools.

Great for: first time Unreal Engine users or those interested in learning it.

Luis Cataldi
Global Education Evangelist, Epic Games

Diving Into Niagara: Intelligent Particle Effects

Hosted by Arran Langmead, this session digs into how you can start building more intelligent effects using Unreal Engine's Niagara VFX system.

Over the course of the presentation, Arran will go over six different example effects, demonstrating how they were made. The session will also cover getting started with some of the new features of Niagara, including sampling the distance field, particle occlusion, and reading information from other particles.

Great for: VFX artists making smoke and explosions, and technical artists interested in building new modules and simulations.

Arran Langmead
Evangelist, Epic Games

08:45 - 09:30 EDT

13:45 - 14:30 BST

Quixel Mixer Workflow and Applying Megascans in a Virtual World

This session will dive into some of the new features in Quixel Mixer 2020—a tool for mixing scans together to quickly create ultra realistic tileable surfaces.

Galen Davis will offer a full rundown of the software, from how it fits into the Megascans ecosystem, all the way through to bringing content directly into Unreal Engine.

Great for: environment artists and world builders.

Galen Davis
Evangelist, Epic Games

How to Use Blender with Unreal Engine

This presentation will introduce and showcase the Blender add-ons "Send to Unreal" and "Unreal Engine to Rigify".

These tools allow for asset importing and updating directly from Blender to a running session of Unreal Engine, and provide a method of rigging and animation that is compatible with Unreal Engine Marketplace assets and custom studio rigs.

Great for: current and future users of Blender.

Kaye Vassey
Senior Technical Animator, Epic Games

15-minute break

Cross-industry

09:45 - 10:30 EDT
14:45 - 15:30 BST

Collect, Analyze, and Visualize Your Data with Unreal Insights

Unreal Insights is a standalone profiling system that integrates with Unreal Engine to collect, analyze, and visualize data created by the engine.

Designed to help users better understand what's happening inside the engine, the tool provides an insight into log output, CPU and GPU timing performance, asset loading performance, networking, and more. In addition to providing robust coverage of the engine's existing systems, Unreal Insights makes it easy to add your profiling data.

Attendees at this session will learn about how the system operates, as well as how it's designed to allow for other kinds of information to be traced, analyzed, and visualized together in a variety of ways.

Great for: programmers and anyone responsible for performance, networking, and memory investigations.

Ionut Matasaru
Senior Engine Programmer, Epic Games

Exploring the Depths of the New Sky & Atmosphere System

This hands-on presentation will explore the Sky Atmosphere system in Unreal Engine. Starting off with the basics, attendees will learn how to render a beautiful and fully dynamic sky within seconds.

From there, the session will look at how to create alien, dusty, or wet atmospheres, after which attendees will be taken all the way up into space to witness how atmosphere rendering is altered depending on altitude.

Finally, the talk will explore the powerful Material Editor integration and how it can be used to create different kinds of sky styles, wrapping up with a brief look at the engine's upcoming volumetric cloud features.

Great for: artists, beginner to advanced level.

Sjoerd de Jong
Evangelist Lead, Epic Games

10:30 - 11:15 EDT
15:30 - 16:15 BST

Building Advanced Effects in Niagara with Unreal Engine

In this demo, Chris Murphy covers the fundamentals of Unreal Engine's new VFX system Niagara and extends what begins as simple functionality into an advanced character disintegration effect.

This presentation is a primer for new developers looking to create effects in Unreal Engine and gives a demonstration of the kind of advanced systems that can be applied to their own projects.

Great for: tech artists and VFX artists.

Chris Murphy
Evangelist, Epic Games

Building Natural Environments in Unreal Engine

In this talk, Paolo Souza will demontrate how to use the power of Quixel Megascans to build a natural looking environment in Unreal Engine. By relying on the latest world building tools in Unreal Engine, it's possible to to quickly create a terrain leveraging the new Edit Layer functionality and rapidly sculpt it with the use of Landscape Blueprint Custom Brushes.

Paolo will also show techniques that can help you create interesting blending effects using Runtime Virtual Textures. At the end, he'll use the Procedural Grass system and the Procedural Foliage Placement tool to quickly add very natural looking vegetation to the scene.

Great for: artists, especially level designers and tech artists.

Paulo Souza
Evangelist, Epic Games

11:15 - 12:00 EDT
16:15 - 17:00 BST

Applying for an Epic MegaGrant: Make Your Submission Stand Out

Epic MegaGrants is a $100,000,000 fund to provide financial grants to creative, noteworthy, and innovative projects built in and around Unreal Engine or projects that enhance the open-source 3D graphics ecosystem.

Need help with your MegaGrants application? Join the Epic MegaGrants team for this session, which provides practical advice for applying for a MegaGrant and examples that can help your submission stand out.

Great for: any Unreal Engine creator who is interested in learning more about the MegaGrants program.

Jeff Peres
MegaGrants Director, Epic Games

Using Unreal Engine in Simulation Applications

For years, the gaming and simulation communities evolved in parallel. Each had their own focus and key goals, while both recognized real-time technology as an essential value of what they delivered. Gaming was always more focused on enhancing visual quality and player engagement. Simulation, on the other hand, was concentrating R&D efforts on results accuracy and learning transfer.

Over the course of the last two years, Epic Games has built partnerships and empowered experts from the simulation industry to reduce the gap between the simulation and gaming paradigms. This is only the beginning. Join us in this session to learn how we are reconciling accuracy, real-time, and visual quality.

Great for: Simulation creators, integrators, GEOInt specialists, and COTS providers in the healthcare, defense, civil aviation, space exploration, automotive, and construction domains.

Sébastien Lozé
Simulations Industry Manager, Epic Games

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