

Alex Lovett

Unity Wrangler, Designer, Programmer, Tech Artist

Hi my name is Alex, I am available to work or consult on short to long term projects. My flexibility and wide skill set allows me to jump into complex ongoing projects to fill urgent roles, fix critical problems or add an extra layer of polish in the final hour, as well as taking on entire projects from start to finish or leading larger projects.

My recent focus has been crafting Virtual Reality VR and Augmented AR experiences / environments / journeys to immerse and entertain across a multitude of desktop and mobile devices / platforms.

Some of my adventures have combined procedural math based motion graphics with massive particle simulations and visual FX which have been especially compelling when mixed with the immersion VR brings.

I have worked for Unity crafting tech demos from concept to finish, programming tools and interactivity to showcase new technical features for dynamic global illumination.

My work appeared throughout Unity's GDC presentation and in these blog posts by Unity:

Architectural Visualization in Unity 5

Unity 5 Lighting Demo: The Courtyard

<http://blogs.unity3d.com/2015/11/05/awesome-realtime-gi-on-desktops-and-consoles/>

I work as both a creative visual designer and a pragmatic analytical programmer, this allows me to see the whole picture and to coordinate with people of varied disciplines.

I bring creative problem solving with a keen eye and attention to detail to any project. I think in terms of the end product and what needs to be wrestled with to hit milestones both in terms of performance (especially crucial in AR/VR) and hitting a high visual quality. This often means taking on a multitude of roles to get the job done, from programming code / shaders, modeling, texturing and animation to developing custom tools and workflows.

I enjoy throwing myself into the unknown and learning new tools and concepts to get the job done, as being well versed in a program as deep and broad as Unity is a challenge requiring constant development to stay ahead.

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Website: www.shadowood.co.uk

Gallery / Videos: www.shadowood.co.uk/Resume/

LinkedIn: www.linkedin.com/in/heliosdoublesix

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If you need any assistance I am available for hire and consultation, so feel free to contact me and I'll be happy to see how I can help out, thanks

Alex

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Blade & Sorcery - WarpFrog - Unity Lead Shader Programmer

October 2022 - July 2025

Quest 2,3 VR, Custom river, fluid flow/foam, caustics, underwater fog without post process, fake transparency, mobile optimised ocean/waves/foam.

Custom PBR shader for skin and hair/anisotropic spec/skin sss, moss, detail maps, specular occlusion and directional specular..

Custom glass shader with fake cubemap refraction for mobile with frosted blurred/grabpass refraction and back lighting.

Rotatable cubemap box shaped reflections for tilting fake reflections.

Portal system for fake interiors thru doors for performance / LOD.

Fake interior / cubemap interiors for windows (parallax correct cubemaps)

Custom foliage shader, backlit, alpha to coverage for smooth aliasing, vertex wind animation.

Custom 'post processing' in shader for mobile optimised tone mapping and color correction.

Custom Alembic to vertex animation texture (VAT) for in shader destruction FX.

Custom clothing occlusion system to handle overlapping clothing combinations masking each other and hiding parts of skin mesh.

Rain/Snow occlusion system for per vertex wetness/snow coverage shield by cover/interior spaces.

Terrain/Mesh multiple texture/vertex painted system using 'Splat' texture arrays with heightmap blending.

Custom light probe volume system for rotatable procedural dungeon lighting.

Custom shader processing for deploying different features variants/keywords per platform desktop/mobile.



Unusual Technologies — OceanX - Unity Lead

June 2025

Lead programmer and technical artist for producing a digital twin of the marine world, utilising advanced data visualisation techniques to provide an experience that enables scientists and researchers to explore data in an engaging and innovative way.

Parsing of GPS/Remote vehicle sensor data/Topological (Bathymetry) data

User interface and interactive elements for controlling playback, camera.

VFX, shaders for terrain, underwater fog/volumetrics

 [OceanX Project Video](#)

"Thanks so much for your amazing work. Always a pleasure!" - Douglas

Unusual Technologies — Dapper Labs - Unity Tech Artist

April 2025

Lead technical artist for wrangling assets/animations and creating VFX Graph particle effects and custom shaders for characters to match concept art.

Unusual Technologies — Tarot - Unity Tech Artist

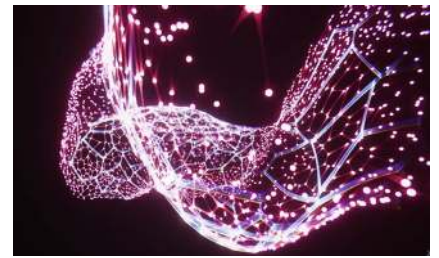
April 2024

Lead technical artist for VFX of rainbow portal to match concept art.

Solarflare - Microsoft — Iris Van Herpen - Unity VFX Lead

June 2022

Hololens 2 optimized shaders and VFX. Use of Unity Jobs/Burst for fast simulation of cloth dynamics, Voronoi web like pattern creation, Boids swarm simulation of particles, procedural tree/vine creation. Use of custom compute shaders along with VFX Graph for particle simulation, plexus style effects, mesh surface to particles and lines. Custom baking solution for alembic and particle simulation to vertex animation texture flipbooks and streaming large data sets onto GPU from hololens storage.



Paradigm — Unity Lighting Lead

March 2022

Implementation of Intel's open image denoiser with Unity's path tracer, customisation of path tracer to support equirectangular/spherical panorama projection.



Momentum — Chevrolet - Unreal Lead

September 2021

Meta humans powered virtual sales project.



Solarflare — Ford - Unity VFX Lead

Feb 2021

VFX Graph, custom shaders, plexus, lightning



Solarflare — Asics - Unity VFX Lead

Feb 2021

VFX, Shaders



Hyper — Mars M&M - Unity VFX Lead

Feb 2021

Simulation VFX Graph / GPU Particles of millions of M&M Lentils that react and follow a users body (Kinect sensor) with Turbulence, Tornado, Anti Gravity / Singularity / Black hole and explosion FX, distance field collision / interaction and collision with character shape/bones and spawning from surface of skinned mesh along with UV coordinates to inherit texture color from mesh.

"Looookinggg ACE - so so nice" - Jess Deacon

Unit9 — League of Legends: Wild Rift - Unity VFX

Nov 2020

Volumetric water fog, death dissolve and explosion, acid spit projectile and screen impact effects, water splash impacts and animated glowing slash effects.



"Appreciate the amount of work that you put into it, it is looking great!" - Zlatan del Castillo

Hyper — Automotive - Unreal Lighting Lead

Oct 2020

Custom workflow for baking multiple times of day, multiple environment changes for Unity and Unreal. Custom dual coat flaked metallic car paint for Unity + Unreal for use on Quest VR. Avoiding performance penalty of HDR and post processing/tone mapping on Quest but achieving the same exact quality.



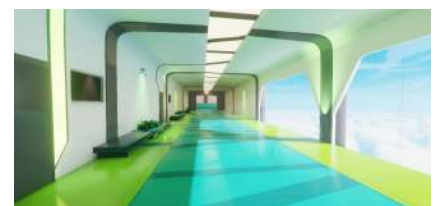
Skills

VR (Virtual Reality with Oculus Rift and HTC Vive, Valve Index, Quest, Samsung Gear VR, MSFT Mixed Reality)

AR (Hololens, Magic Leap)

C# Programming

Shader Programming





"The scene is looking amazing" - Jack Berreby

"That is absolutely beautiful, Alex! Love it!" - Stefano Tsai

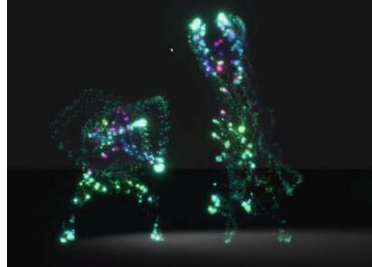
Videos: <https://imgur.com/a/OuVO9l1>

Happy Finish — Unity VFX

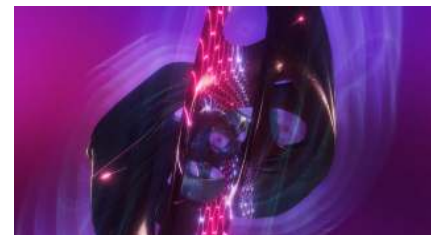
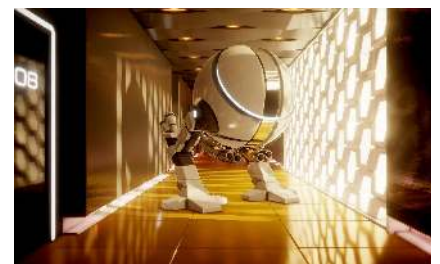
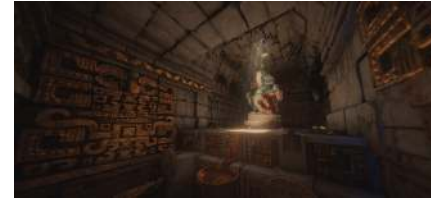
Feb 2020

Creation of complex GPU compute particle systems to follow realtime tracked people (Kinect sensors) from electricity with lightning, nuclear, chemical and elastic style effects, complete with a background fluid like vector field influenced by the motions.

Videos: <http://imgur.com/a/rQ8N2Nb>



A second component involving blending between multiple characters with various weighted effects to represent nuclear/coal/gas/solar etc - a complex problem to solve how to technically and artistically blend these properties so they remained distinct and didn't become one giant indecipherable mush.





Video: <https://imgur.com/hmk5ug0>

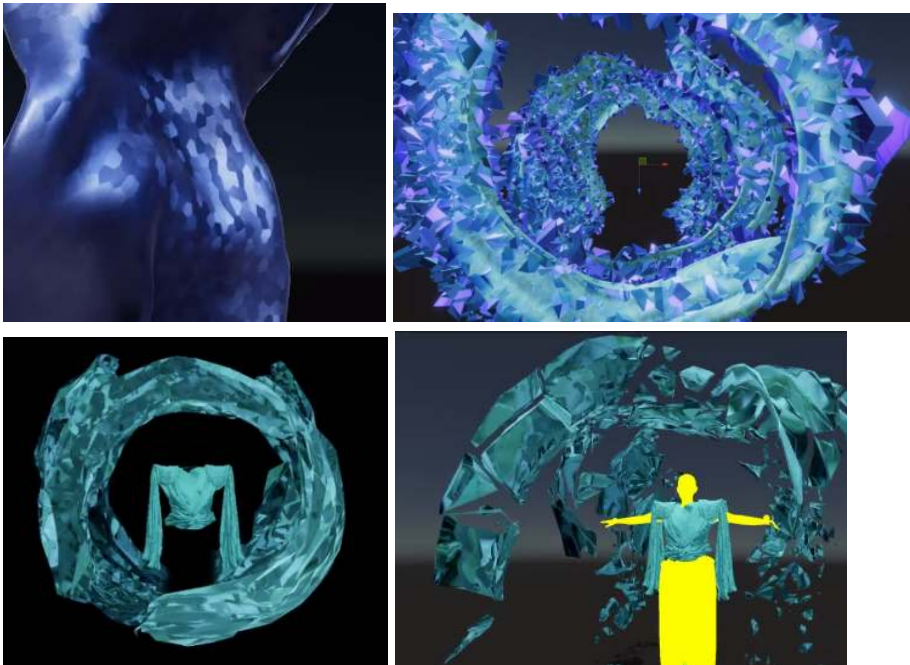
"Hey, good job with the characters so far. Really like it" - Sebastian Kedra

"The Theatre of Energy for Aberdeen went up recently and they were delighted with it, so thanks for your work." - James Harris

Unit9 - EE Bafta — Unity Shader Programmer

Jan 2020

Bafta - EE - VFX / Custom anisotropic satin and crystal material



"Thanks again for the hard work and went the extra mile with all the mad creative requests. The closeup detailing looks amazing when we finally saw them on the big screens!" - Rose Hung

Nucco Brain - Google — Unity Lighting Lead

Dec 2019

Lighting and performance work on scenes for realtime VR

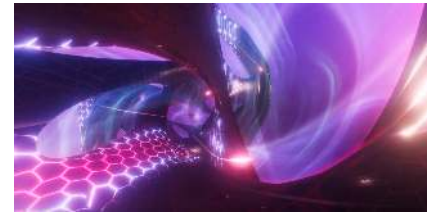
"Looking very good man! Thank you, You really helped us a lot and I'm most grateful" - Adam Blumenthal

"Let me take the opportunity to reiterate once more how much the whole team appreciated your work and your professionalism." - Mariano Cigliano

Unit9 - Rolls Royce— Unity Lighting Lead

Nov 2019

Light baking with support for multiple times of day



"Great demo, lots of really positive feedback" - Ben Hume-Paton

Unit9 - Virgin Galactic — Unity Lighting Lead

Nov 2019

Handling importing of CAD data into Unity thru scripting automation for Rhino, Cinema 4D and Unity.

Handle automated baking of light maps and probes and faded transition between multiple times of day using custom shaders allowing them to blend smoothly from one to another.



"The design director of Virgin Galactic loved it. Great work Alex!" - Mariano Cigliano

"Great, thank you for everything by the way - Great job, the team was really happy with everything" - Jack Berreby

"I also wanted to congratulate for the very great work on VG, well done" - Valerio Rossi

Future Deluxe - Google — Unity Wrangler

Oct 2019

Wrangle an existing project into shape from labyrinthian pre existing code.

"I just wanted to send you a massive thanks (from everyone here at FD) for that epic push. You've done an incredible job with an unbelievably tricky task and I'm super grateful for your efforts, mega skills and unshakeable goodwill :) You're both wizards, the magic work worked on this is hugely appreciated" - Curtis Baigent

"let me chime in with the chorus of folks who sing your praises - thank you very much for your help on the morphing pottery project, I very much appreciate it." - Tim Gfrerer

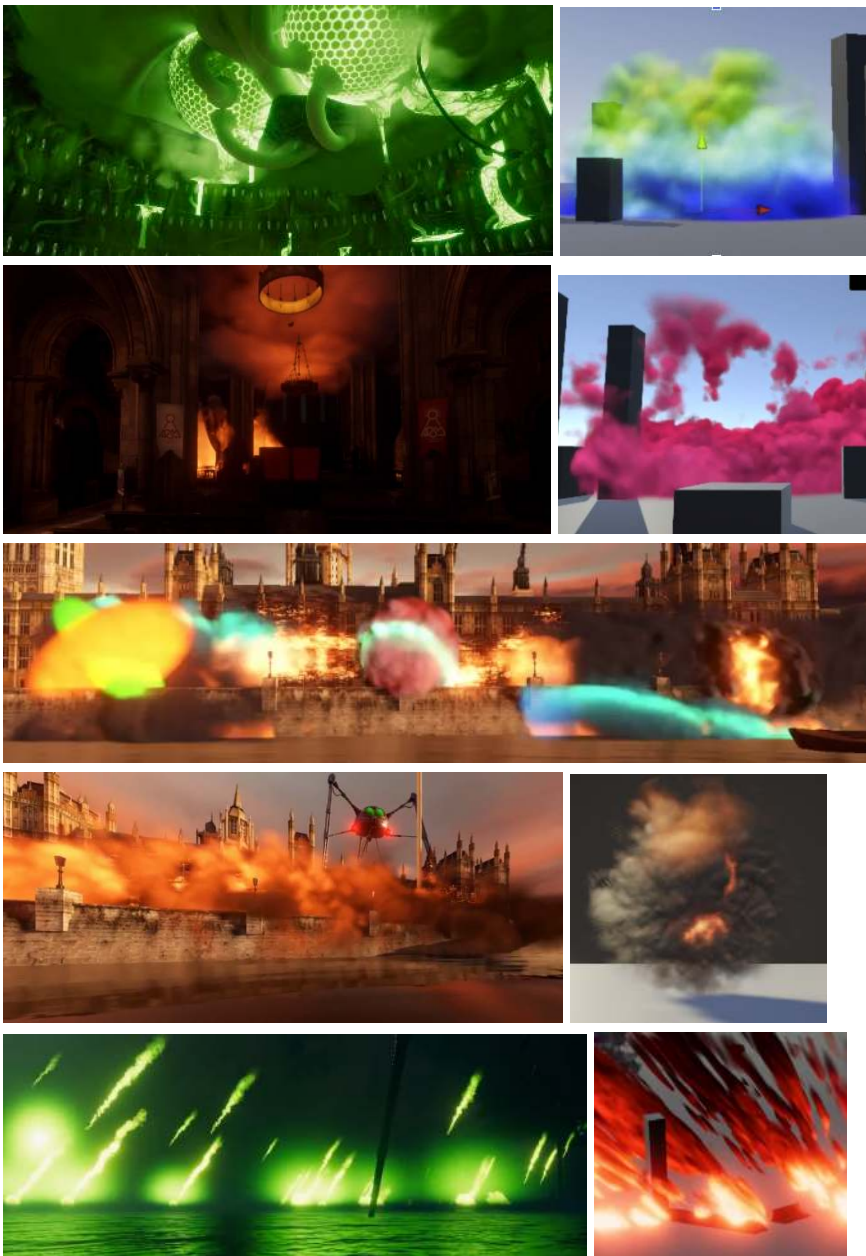


Ellipsis London — Unity VFX

May 2019

VR Experience for The War of the Worlds in London. Created custom volumetric shaders and effects for particles, explosions, smoke/debris, fire, clouds, atmospherics and transitions for use in VR.





"Your church fire is blummin brilliant! Just reviewing in the venue and it has made the whole scene way more scary." - Faye Barber

Unit 9 — Lead Lighting and Shader Artist

June 2019

iPad Pro AR app, custom automated baking setup with GPU baker/bakery for night and day transition, custom shaders for water, waves/shore foam. Custom code and shader for soft animated masks using distance fields.



"Special thanks to our Unity dev Alex, who gave his extra touch to take the visuals to another level" - Yi Nong Dong

"Congrats to the whole team - wonderful to have such a happy client, thanks for your tireless efforts and take a moment to bask in your glory!" - Rosh Singh



Tin Drum — Lead Lighting, VFX

Feb 2019

Worked as part of a small team on a Magic Leap Augmented Reality experience: Marina Abramović: The Life, Serpentine Gallery: 'a slow, minimal, intimate encounter with a virtual Abramović'.

I developed tools for playback of per frame textures, meshes and pre calculated particle simulation data for mobile HoloLens and Magic Leap deployment while maintaining high FPS and high particle count.. Custom shaders for procedural VFX dissolve transitions using distance to plane masks. Custom workflow for texture processing import/export for on GPU composition, dilation/padding and masking/blending of textures and lighting based on world position, chroma keying and distance to sphere masks.

I hacked together a GPU system so that particles can bounce / collide with real surfaces in your room as you would expect. This is none trivial to do in GPU and requires use of volumetric distance fields to perform fast with 10's of thousands of particles on a mobile AR device.



Some of the nearly 100 Leaps setup for the experience:



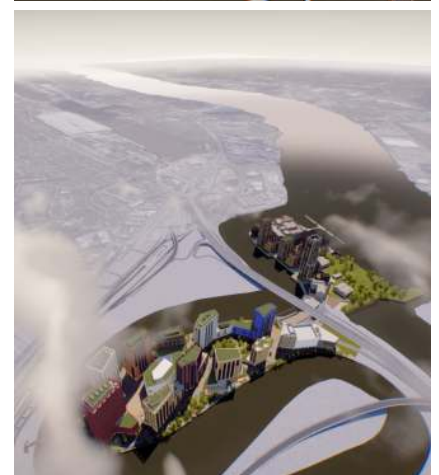
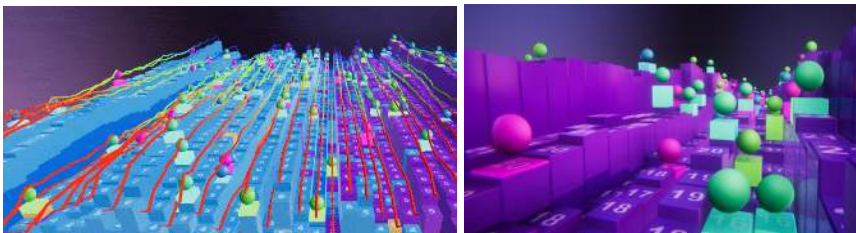
"Today was truly an amazing day. All your hard work paid off. Wonderful comments from the press and VIPs. We delivered. Well done you all... Congrats again team!" - Cris Aragon

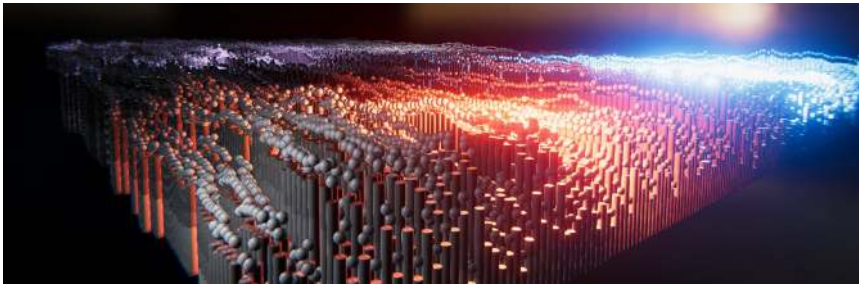
Omega One — Lead Unity Guru

Aug 2017

Realtime volumetric visualisation of stock market liquidity. Fashioned a custom GPU compute based renderer for visualising massive quantities of data with 3D graphs and charts of realtime stock market data.

"I'm running out of unique superlatives! Stupendous! " - James Andrew



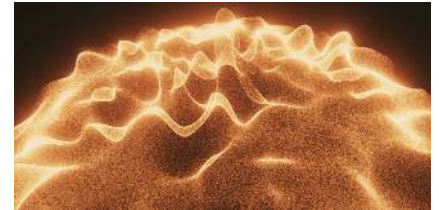
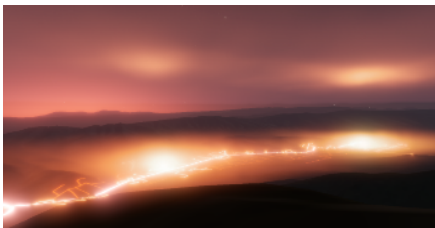


Microsoft - Jaunt VR — Lead Unity VR VFX

Aug 2017

Fashioned a custom GPU compute particle simulator for VFX, swarming behavior, 3D mesh particles, trails, turbulence, distance fields, emission from mesh/texture, morph targets, that goes beyond what Unity can normally do with built in particle systems with an extreme performance advantage. Along with other items such as customized volumetric FX for fog, haze, lighting and baking tools.

"Well done!! they're all freaking over this, It's beautiful " - KC Austin



All Seeing Eye — Unity Tech Artist

March 2018

Responsible for CPU based particle effects for Desktop VR and Gear VR, water explosions, tracer bullets, impact collisions with stone and water, code for guided turrets to pause and reload using real world values.

"Thank you, the project is has really benefited from your work" - Adam Child

"There's no specific feedback on the other effects that I've integrated because they all look boss" - Robin North

"The event went really well yesterday showing the Dambusters experience, everyone was really overwhelmed by it" - Ollie Lindsey

THE VOID VR — Unity VR Lead Lighting Wrangler

Aug 2017

Custom editor light baking tools for working across multiple scenes, working with lights, and general lighting work to match the look and feel of concept images

"Your lighting is looking nice! bringing the world to life!" - Alan Curtis



Unity Technologies — Lead Technical Artist, Producer

November 2015

Creation of 2 demo/animations showing off unreleased beta features for Unity 5 such as the new dynamic lighting engine (Enlighten)

Unity 5 Lighting Demo: The Courtyard

<http://blogs.unity3d.com/2015/02/24/gorgeous-arch-viz-in-unity-5/>

<http://blogs.unity3d.com/2015/11/05/awesome-realtime-gi-on-desktops-and-consoles/>



This project involved creation of many custom automation tools for workflow, import export, super high res video capture. Custom sky shader for day to night transition and reactive lighting props and dynamic AI in the form of wandering orbs.

"Hi Alex. I'm a big fan of your work. So much that I tweeted about it - Gorgeous architectural lighting in Unity 5. So damn pretty... the future is truly (nearly) here!" - David Helgason (Founder of Unity)

"You have a good mind for what we/the community needs... you've shown it to us." - Scott Peterson

"IMNSHO one of the prettiest pieces ever made in Unity" - Robert Cupisz

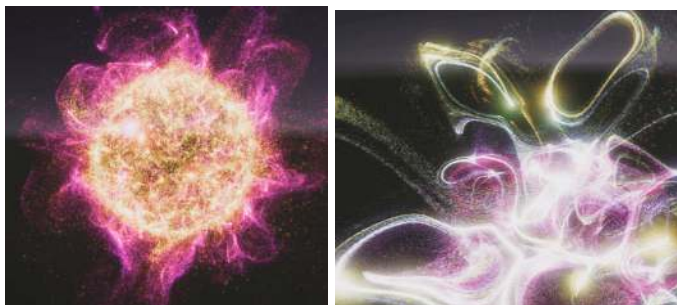
"Amazing PBR/GI visualization" - Aras Pranckevičius

Holosphere — Lead Unity Tech Artist

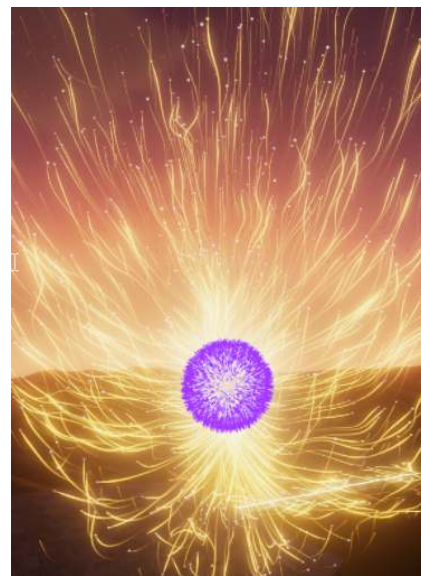
February 2018

GPU Particle VFX in VR reacting to motion of dancer's hands and feet. Use of realtime velocity vector fields for air flow

"Really impressed with how it's looking" - Sean Duffy



Use of animated distance fields to follow contour of morphing car that has a volumetric/animated surface texture as rough rock wears away to reveal layers of marble, runs on iOS iPad





Marshmallow Laser Feast — Unity Lighting Artist

November 2017

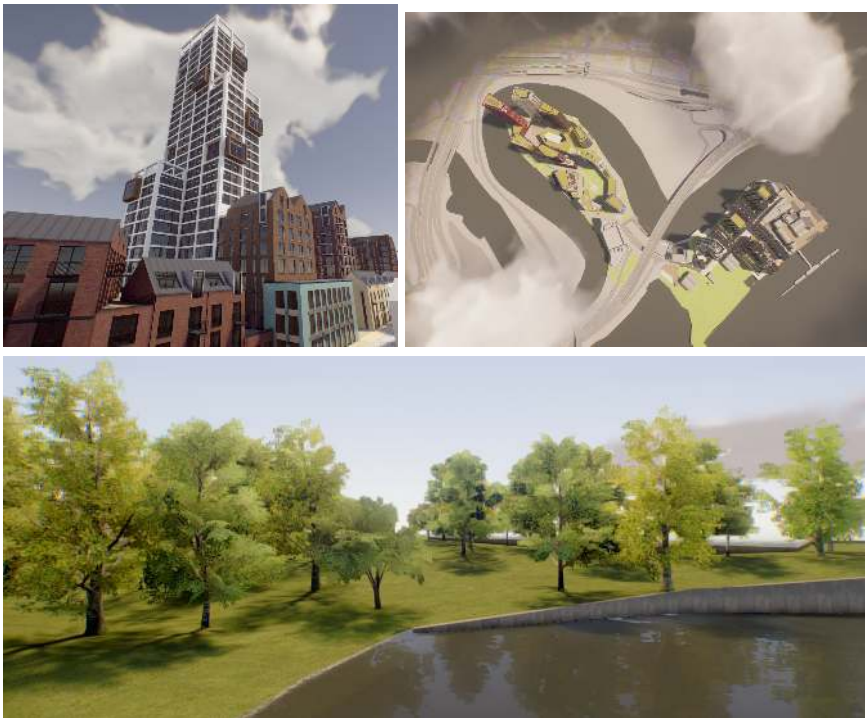
Realtime lighting setup and consultancy for VR

"Thanks for your work on the project - some great results!" - Martin Jowers

Neural — Unity Tech Artist

April 2017

Responsible for assembly, lighting/baking, textures/shaders, optimisation/performance of an interactive 3D model of 2 islands full of buildings viewed both up close at street level and from a distance above the clouds (complete with volumetric cloud rendering). The scale and complexity of the project would render it impossible in Unity 5.5 with Enlighten and so I pushed forward with an experimental/beta version of Unity with a new progressive lighting baker; bending it to our needs. Custom shaders were created for randomizing textures to hide tiling seams, animated river shader with foam, depth fog, and customized interior mapping shader that simulates 3D looking interiors behind windows at low cost.



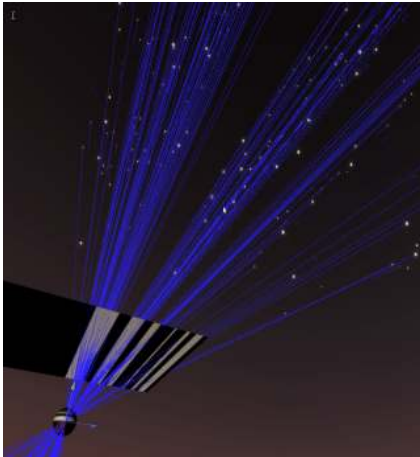


RAB Lighting — Unity VR Project Lead

March 2016

Creation of a realtime 3D VR (Virtual Reality with Oculus Rift) fly through of several buildings showing realistic lighting and materials. I authored the entire experience from programming tools for import of CAD data, programming animation tool to smoothly tween between user placed locations to facilitate quick and easy editing and removal of animation clips, cleaning up and remodelling building structures, writing custom shaders for animated water / caustics, handling smooth crossfade transitions without frame drop in VR and altering time of day with realtime bounced lighting (global illumination)

"It's a hit! Selling out packed audiences every 10 minutes, 500ppl per day! Great job Alex!! The exhibit was the talk of the show. Your hard work was appreciated by so many!!" - Ross Barna CEO



Ubisoft, Paris — Unity Lighting VR Tech Artist

August 2015

I was brought in to work on a Virtual Reality / Oculus project moving it from Unity 4 to 5 and taking the lighting, post fx and color grading to the next level. This fantastic project involved a D-BOX motion chair that moved in combination with the experience you see in virtual reality using the Oculus, this produced a significant benefit both in immersion and making it an exciting yet comfortable nausea free experience even while being thrown at great speed down dangerous ice slopes and across ravines. Various technical challenges were faced in keeping a steady frame rate in VR while maintaining high quality visuals and effects. This is crucial as any slight drop in performance is magnified in VR producing jarring pauses as you turn your head, highlighting the need for careful planning and performance profiling throughout a VR project.

Digital Kitchen — Lead Unity Tech Artist

May 2015

I was brought in to work on a Unity 3D powered realtime rendering project for DK

"The presentation of the work was amazing - we definitely surprised a lot of people with how far we could push the boundaries of the technology. Our client is ecstatic about the potential of the platform. It's always great to see a client's face light up with excitement when you load something on the screen. The Unity platform was something we had to prove could work - and with your help, we knocked some socks off." - Anthony Vitagliano of DK

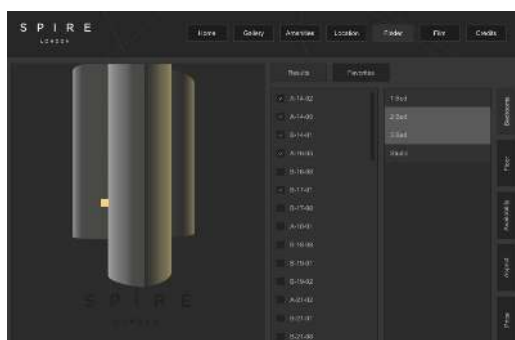
My job was taking the detailed assets from the team at DK and producing custom materials, shaders and effects that within the limitations of realtime 3D with Unity to visually match provided cinematic quality animated 3D mockups. I handled the cinematic look, lighting, post production, custom code and shader programming (water caustics, procedural coloring and patterns, refractive and dispersive translucent frosted glass like effects in realtime) to turn it into a living breathing piece.



Pipers — Unity iOS UI/UX Lead Developer

July 2016

iPad Pro app deployed with 3D visuals and responsive/flexible UI to filter and navigate floor plans and photo gallery for 1000 apartments with a 3D view of the building on the left to show apartment location. Database loading, filtering and display in themable flexible UI synchronized with a 2nd giant screen, and a large scale model of the building that illuminated apartments based on your selections.



Masters Of Pie — Unity VR VFX Lead

July 2016

VR realtime 3D visualization of complex animated machinery using post FX such as realtime global illumination with voxels to add depth and readability to complex models where baking of data would be impossible. Including custom shader for fading in wireframe without doubling draw calls and other visual FX.



A Brave Plan — Unity Lighting and Shader Guru

June 2016

Dramatic lighting and shader overhaul of existing project. Post FX and Color correction to achieve hand drawn minimalist art style, custom depth aware shader for water caustics.

"The meeting... their jaws... amazing... good job on all that" - Georg Backer

Felix & Paul - Future Visual — Unity VR Lead

January 2017

VR realtime 3D animated demo of animated voxelized animals in a psychedelic color changing dream sequence. Tool building to automate and convert meshes into optimized and animated voxels (like Minecraft) keeping performance high while matching closely the original concept art and offline cg renders. Custom shaders and post FX for color changing in VR as you move your head, system for randomizing and controlling spatial sounds timed with interactivity and imported animations. Custom loading system to split gigs of mesh data into shorter sequences to avoid crashing.

"Looks great well done !" - Tim Fleming



Marxent — Unity VR Expert

January 2017

Consultant on various architectural visualization projects, brought in to bring visual quality up a notch and teach others, tackling dynamic scenes with changing layout and furnishings with realistic lighting and materials for both VR and mobile iOS.

"The team loves it ... These look amazing ... this is why we're calling in the big guns (you)!" - Shawn Rothery



Arch Virtual — Unity VR Lighting Expert

April 2015

Realtime scene for Oculus VR in Unity 5 - Model / Scene / Textures were all provided, my job was to take existing assets and make any alterations needed to add photo real touches using latest rendering technologies with greatly improved lighting and post processing effects

"It turned out even better than I hoped it would. I really appreciate it! and everyone I show it to is blown away" - Jon Brouchoud

More here:

<http://archvirtual.com/2015/06/05/virtual-realism-with-unity-5/>
<https://www.artstation.com/artwork/39D0m>

Ora Systems — Unity 3D Tech Lead

April 2015

This Project was for <http://www.ora.systems> to create a procedural vortex using motion, color and texture produced in realtime with Unity 5 for web and mobile using a mix of custom built shaders

More Here: <https://www.artstation.com/artwork/OGqwy>

"Alex is a rising star in the Unity family. We were looking for a very specific mix of Unity-expertise and creative engineering to build what many coders had told us was impossible, at least as far as the spec demanded. Alex came in, immediately keyed in on the ask, and delivered on time and far exceeded our expectations. He has a deeply adventurous intellect and knows how to exploit the Unity engine to create otherworldly results." - Stephen Marshall co-founder at ora.systems

Bossa Studios — Unity Wrangler

May 2016

I consulted on possible technologies and lighting solutions for an upcoming game, along with wrangling an unannounced VR title's lighting and post FX to match concept material. Writing custom shaders to allow artists to apply darkening/fog in shaded tree areas that could facilitate a destructible environment and apply color correction in specified regions defined by 3D volumes with adjustable falloff and wrangling of volumetric effects to add atmosphere with artist placeable/paintable ground fog and volumetric sky/clouds

"Thanks for all the work that you did, lots of cool visual effects" - Leo Brennan - Producer at Bossa

Metris Code — Unity Lighting and VFX Lead

July 2016

Optimize Lighting and Rendering FX for Console game.

"Wow that looks great!" - Marcio Paulo

Ironbelly — Unity Lighting Tech Artist and Programmer

June 2016

Various projects from programming a dynamic node based traffic system with Editor tools to dramatically improving existing lighting and shaders, fullscreen post fx for gradient colored radial depth fog, custom tone mapping and color correction tools.

Geomerics / Polycount — Unity Competition Judge

June 2016

I was honored to join a panel of judges for Geomerics and Polycount Unity lighting competition that used my work for Unity Technologies as the template for people to work with.

More here: <http://polycount.com/discussion/171247/the-courtyard-an-enlighten-lighting-contest>

Solid Anim — Unity Lighting Expert

April 2015

This Project was for SolidAnim in collaboration with Vicon, Popcorn FX and Art Graphique Patrimoine. I was responsible for Lighting and Materials for an existing model based on scanned data in Unity 5.

More here: <https://www.artstation.com/artwork/AIWEe>

Impulsonic — Lead Unity VR Tech Artist

November 2016

Initial exploration into design concepts for demoing advanced sound propagation technology