BENJAMIN KOGA-WINN

Senior Developer: Unity3D Hololens/MagicLeap/Mac/PC/iOS/Android, Maya, Modo, C4D, C#, AR/MR/VR.

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Creator of interactive experiences in virtual space. I strive to employ my design and development skills in 2D, 3D and programming to build intuitive, interesting, and visually appealing applications. Specialties: MR/AR/VR development, programming, virtual environment design, 3D design, interactive fixtures, game design & production.

EXPERIENCE

Intel Sports - Pathfinding (Contracted via Artech in 2018, hired July 2019) — *September 2018 - March 2020*
Research Prototype Engineer & Unity VR/AR Developer

- Created 3D, AR & VR applications demonstrating novel, immersive ways to watch professional sports on mobile AR/VR and new devices such as Magic Leap and Looking Glass.
- Ingested skeletal data from internal studio teams to drive experience enhancement research prototypes.
- Extensive integration experience of Intel's TrueView volumetric content for 3D and AR/VR/MR applications.
- Created toolset to convert animated 3D meshes to point-cloud sequences for external sharing with partners, allowing collaboration while protecting Intel IP and content rights-holders.
- Co-developed 6DOF implementations of compressed point cloud sequences with playback features.
- Developed color-correction tools for point cloud sequences using application of Z-order search algorithms.
- Prototyped new social engagement features and interactions within networked 'Cheers' VR experience.

Winndustries — *December 2017 - Present 2019*
Freelance Interactive Developer & 3D Designer

- Created Hololens photogrammetric live dance experience for Pacific Northwest Ballet 'Pointe to the Stars.'
- Developed Oculus Go interactive 360 video portal & branding experiences for AT&T with Platform VR.
- Updated interactive features and 3D assets for Hinge Digital's Converse iOS product viewer AR experience.
- Acted as 3D/Unity/AR/VR consultant for Panogs, Vulcan Productions, Generator3 and Lindsay Digital.

Vizwerks — *March 2012 - November 2017*
3D Developer & Unity3D Programmer

- Demonstrated product value through interactive previsualization applications for major retail brands.
- Developed interactive 2D & 3D retail applications for iOS, Android, PC, Mac, Hololens, and Raspberry Pi.
- Maintained and reconfigured Node.js servers on Amazon AWS EC2 instances to pass data between 3rd party SDKs and Unity applications (as well as direct access to third-party SDKs).
- Created optimized 3D assets & detailed product renderings with Photoshop, Maya, Modo, C4D, and Zbrush.

EDUCATION

Portland State University — *Graduated 2016*
Masters of Science, Systems Science & Theory

- Awarded Graduate Certificate in Computer Simulation & Modeling

The Art Institute of Portland — *Graduated 2013 | 2014*
Bachelor of Science, Visual & Game Programming | Bachelor of Arts, Game Art & Design

- Two-term Code Team Lead for 'Game Production Team,' the ultimate course for game design students. Oversaw four programmers to create a multiplayer team-based space arena game with planetary physics (local spherical and non-traditional gravity).
- Lead Programmer in a 48-hour Game Jam, managing four other programmers to develop a mini-game suite.

PAST PROJECT SAMPLES

3D Replay - Interactive Sports
2019-2020

https://connect.unity.com/p/3d-replay-interactive-sports

Developed a prototype experience to playback real recorded human movement that drove digital 3D visuals.

- Users could anchor their camera to an individual, object, or predefined position intuitively to see any angle.
- Timeline controls and slow-mo effects made it easy to never miss a moment of the action in great detail.
- Timeline was seamlessly tied to video that could be swapped to instantly to compare against the 3D version.

Synthetic Point Cloud Generation & Post-Processing Tools
2019-2020

https://connect.unity.com/p/synthetic-point-cloud-generation-post-processing-tools

Created a suite of tools to handle common issues faced by research team's point cloud sequence experiences.

- Synthetic Point Cloud Generator that received animated meshes as an input, and batch created frame sequences of evenly distributed point cloud representations, based on points per area or per input mesh.
- Post-Processing Tools created to receive input point-cloud sequence and output user-defined sequences free of discoloration and artifacts with the help of intuitive UI and modified Z-order sort techniques.

Cheers - Social VR Multi User Prototype
2018

https://connect.unity.com/p/social-vr-networked-multiplayer-demo

Assisted upgrading a networked multi-player VR prototype to include physics games and player customization.

- Integrated instance-persistent physics objects that were tracked across the multiplayer network, allowing the later development of user interactions including: spawning objects over the network, playing physics games (darts), and tracking custom object behaviors (how full a pourable container remained).
- Added real-time player customization and 3D VR 'hand' imposters to the user's controller representations.

Pacific Northwest Ballet Immersive Hololens & Video-Photogrammetric Experiences
2018

https://www.thestranger.com/events/25962956/pointe-to-the-stars | https://vimeo.com/273940328

Contracted Lindsay as the sole developer/programmer to Integrate video photogrammetric capture from Microsoft to create three user experiences for a Pacific Northwest Ballet premier event.

- One 'Human' and one 'table' scale experiences using Microsoft Hololens headsets. Two digitally-captured dancers perform a choreographed routine to composed music, while simulated flower petals swirl around them. Included tutorials to ease transitions between users and facilitators at the event.
- A Windows Surface version preview for those waiting to experience the performance on Hololens.

Prototype Hololens & AR Footwear Experiences
2016, 2017

https://connect.unity.com/p/5a15382932b306001e5a93ec

Developed two experiences for the 'Harden' shoe lines to showcase early product prototypes.

- Harden V2: iPad Augmented Reality experience where a prototype shoe could be viewed from all angles in 3D by adjusting the iPad's screen around a logo anchor, with infographics and video.
- Harden V3: Hololens immersive Mixed Reality experience where a prototype shoe is viewed as a 3D hologram in real world space, inter-actable with gestural controls for rotation and color customization.

Both experiences were shown in conferences and one-on-one with key stakeholders to introduce the products.

Adidas Gearcase (Unity Interactive Retail Installation)
2014

https://connect.unity.com/p/5a1538c103b002001c92f220

Assisted on development of a Gearcase experience for Adidas - a product case and screen combined into one, using a translucent material to overlay video in-front of a physical product presentation. Tasks included:

- Design and creation of backend/management controls allowing special access to a power-management interface, setting specifications for sleep/wake cycles, and update controls.
- Programmed a system of automatic update deployments via USB, such that new seasonal product launches could be accompanied by a USB sent to specific stores, requiring only that managers plug in the USB in order to update the Gearcase's onboard executable file with new experiences for new shoe lines.
- Development of season-specific user interface interaction, as well as video advertisement triggers.

PROJECTS CONTINUED

Dischord - Global Game Jam 2018 Collaboration   *2018*

https://globalgamejam.org/2018/games/dischord | https://connect.unity.com/p/dischord

Co-programmer and game designer on a 4-person team - along with a composer and 3D artist - to create a VR and Desktop 'musical battle game.' The experience involves strumming strings on a magical harp to create shapes in the air in tune with music, in order to counter the shapes and sounds created by an opponent.

- Constructed core game logic and scoring mechanics, as well as projectile interaction and state machines.
- Application of inverse-kinematics skeleton and animations for enemy AI character and desktop player.
- Integration of sound effects and layering, additive, reactive background musical compositions tied to score.

Converse AR Experience Update for Hinge Digital   *2018*

https://vimeo.com/280413845

Made updates to Hinge Digital's Converse AR experience for iOS. These included: new scene lighting, new shoe styles, menu and UI adjustments, new textures and materials, and migration to new iOS versions.

Footwear Wall Planner Application   *2017*

https://youtu.be/HL-qe6ALZOo

Solo-developed a retail fixture planning suite for iOS, Android, PC, and Mac. Users choose between wall styles, and assign product to each slots, demarcated through color and symbol coding as well as serial numbers. Database of footwear was imported each season from a spreadsheet. Final plans could be saved/loaded later, as well as the contents of which saved and tabulated for costs and other bookkeeping. Drag-and-drop features were later added.

Adidas Runbase Boston Marathon Interactive Wall   *2015-2016*

https://connect.unity.com/p/58a61bec09091559199ce70e

An interactive touch-screen installation for the Adidas Runbase Boston Marathon store. Tasks included:

- Generating an infinite scrolling wall of names from past runners sourced from a CSV database, with pop-up search tools to bring up information of said runners based on country/state of origin, name, date run, etc, with functionality to record messages for individual runners.
- Creation of scrolling & updating calendar pulling from an Eventbrite server curated by Adidas, as well as social media wall populated by live twitter content via a twitter crawler.
- Hotfixes, tweaks, and new features as requested by Adidas periodically.

SONNET - 3rd Person RPG Project (Preproduction Only)   *2017-2018*

https://dev.sonnetgame.com/about-sonnet/ | https://dev.sonnetgame.com/media/

Worked with team of enthusiast concept artists, composers, 3D modelers to create a game concept in a virtual cybernetic world where game-play mechanics intertwine with real-time dynamic music.

- Worked as the team's project manager, coordinating all other members, assigning and monitoring tasks.
- Worked in tandem with concept artists to create several of the games characters & reusable assets in 3D.

PROFESSIONAL REFERENCES

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