

# ARYEH MISCHEL

Developer & XR Specialist

## SKILLS

**Languages:** JavaScript, TypeScript, jQuery, C#, Python, SQL, HTML/CSS, Bash.

**Unity Game Development:** Unity 3D, URP, Popular VR Libraries & Frameworks (XR Interaction Toolkit, Oculus Integration, SteamVR, autohands, hurricane, and more), Unity Particle Systems, ShaderGraph, 3D Lighting, Mecanim Animation System, 3D Game math, Unity Profiler, PlayerPrefs, ProBuilder

**WebXR:** ThreeJS, A-Frame, WebXR, WebGL/GLSL, basis universal textures, draco compression, ktx tools

**General Web Development:** Vue, Vite, Webflow, NodeJS, Express, PassportJS, OAuth, Webpack, Syncfusion.

### Tools and Technologies:

**AWS Services:** IAM, S3, CloudFront, Lambda, SQS, ECS, ECR, EventBridge, Cloudwatch.

**3D Modeling & Animation:** Blender, ZBrush, Unreal Meta Humans, FaceBuilder, Facelt, mocap, Auto Rig Pro, Meshroom.

**General Development:** Git, Docker, Jira, Agile, REST.

**Design & Image Editing:** Figma, Gimp, DaVinci Resolve, Photoshop.

## EMPLOYMENT HISTORY

### CONSULTANT UNITY 3D/VR DEVELOPER

2021 – 2022

#### Beam Imagination

- Applied knowledge of proprioception to design and implement an immersive weapon interaction system for a VR FPS game.
- The weapon interaction system used visual tricks to overcome the physical constraints of the Meta Quest 2 controllers .
- Used Unity's Springs, Hinges, Colliders and Physics to add realism and interactivity to the different parts of the weapon (e.g., slide, hammer, revolver drum, safety, etc).
- Edited 3D Models in blender (seperated weapon parts), allowing for these realistic physical interactions.

### CONSULTANT UNITY 3D/VR DEVELOPER

Sep 2020 – Nov 2021

#### Hooldus Connect

- Developed a VR game in Unity similar to Beat Saber – an MVP that helped secure the company's initial funding.
- Managed the entire project lifecycle, including technical architecture, UI design, animations, VR interactions, and more.
- Built core gameplay mechanics using the XR Interaction Toolkit and the "EZ Slice" component.
- Developed a scalable data pipeline utilizing PlayerPrefs, custom .NET scripts, and Firebase to support rapid testing.

### DATABASE DEVELOPER

Jun 2020 – Jan 2021

#### Diligent Systems

Handled various independent tasks such as database design, writing and optimizing SQL queries, managing MS SQL databases, and developing stored procedures. Gained expertise in backup and restore processes while learning advanced database management and performance optimization techniques.

## PROJECTS

### 360-VIEWER

[bit.ly/4lmiu49](https://bit.ly/4lmiu49)

2024

- Developed a user-friendly website for 360-image viewing using A-Frame, HTML, CSS, JavaScript, and jQuery.
- Added support for multi-image uploads with Dropzone.js.
- Implemented Web Workers for multi-threaded image processing.
- Improved performance on CPU-limited devices (VR & Mobile) by converting images to bitmaps in Web Workers, enabling efficient GPU memory uploads.

### PORTFOLIO WEBSITE

[aryehmischel.com](https://aryehmischel.com)

2024

- Created a responsive portfolio website using Figma and Webflow for design.
- Added 2D animations with CSS and 3D interactive content with Three.js.
- Built the backend using NodeJS and Express.
- Optimized performance with tree-shaking and Webpack.
- Ensured fast content delivery through AWS CloudFront.

### XR-VIEWER

2024-present

- An immersive content viewing and sharing platform. **\*Unfinished**
- Frontend: Vue, Vite, SyncFusion File Manager, Three.js, WebXR Layers API, and WebGL.
- Backend: NodeJS, Express, and AWS for hosting.
- Authentication & Sessions: PassportJS, Express Sessions, (user data & sessionstore in AWS RDS MySQL Database).
- Media is stored in AWS S3 bucket and delivered via AWS CloudFront.
- Containerized microservice for 360 media processing deployed through S3 events, SQS, EventBridge, and ECS Fargate.
- Microservice runs on a stripped Linux distro using KTX command-line tools to encode and compress GPU textures from user-uploaded media.