

Vincent J. Liguori

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Tangelo Games Israel, Tel Aviv

Lead Client Engineer - Contract, March 2021 to May 2023

Description: In my role as a Lead Client Engineer at Tangelo Games Israel, I was responsible for the end-to-end development of a Unity3D mobile free to play slot machine framework, used for Best Casino Legends Slot 777. A significant aspect of the project's success was the streamlined asset management system, which utilized on-demand loading, reducing memory usage and enhancing performance. This modular approach enabled scalability and adaptability, fostering a flexible platform for creating various games. The dynamic game generation, capable of customizing slot games on-the-fly, provided varied and unique gameplay experiences. The integration of localization broadened the game's reach, and a focus on optimization techniques, such as event-driven architecture, contributed to a responsive and smooth gameplay experience. Best Casino Legends Slot 777 is available on the [Google Play Store](#) and [iOS App Store](#). It currently has 4.3 stars with over 100k downloads on Google Play. My impact on the game's development and success encompassed technical leadership, strategic project management, quality assurance, and a commitment to excellence.

Responsibilities and tasks:

- **Technical Leadership:** Guided the technical direction of the project, ensuring alignment with project goals
- **Project Management:** Managed and collaborated on tasks through Jira, keeping project organized and on track
- **Cloud Hosting & Asset Management:** Setup Unity project and AWS for cloud-hosted addressables through Amazon S3, and implemented Addressables to load bundles
- **Quality Assurance Standards:** Set standards for the QA team, leading to higher reproducibility and faster results; collaborated to identify and resolve issues, and perform manual testing
- **Tool and Package Creation:** Created UPM package through NPM with a private git URL, and developed tools to install prerequisite packages, layers, and an API for front-end customization
- **Localization & Serialization:** Implemented Localization API for string and sprite localization, and serialized and deserialized JSON data in a thread for game state and storage
- **Audio Management:** Utilized Unity's audio mixer system to manage game music and sounds with separate audio streams
- **Animation Development:** Implemented Spine animation and 2d animation walk cycles
- **Proof of Concept:** Developed a proof of concept in Unity3D with Node.js and SocketIO for a multiplayer isometric mobile game

American Bureau of Shipping, Houston, TX

Unity Developer - Contract, August 2020 to Feb 2021

Responsibilities and tasks:

- Project Analysis and Feasibility
- Developing UI for massive data, and rendering massive 3d models with Unity, C#, Microsoft SQL, Visual Studio 2019
- Conversion of CAD models to a format compliant with Unity
- Prepared solid models for occlusion culling in Unity
- Prepared concave meshes for collision
- Developed scalable UI through reuse of offscreen UI components and multi-canvas management to support huge data set
- Deployed WebGL build for Azure

Forum Energy Technologies, Houston, TX

Software Engineer, Sept 2012 to April 2020

Responsibilities and tasks:

- Researching the implementation of new features for the VMAX Engine
- Maintaining released software in the VMAX product line by fixing bugs and implementing new features
- Providing support to existing and new customers for licensing and bugs
- Developed a frontend to VMAX with C++, MFC, Visual Studio
- Managing startup of VMAX simulator in multi computer environment with C# and XML
- Implementing 3d model transformations using DirectX and matrix calculations
- Developing training and engineering scenarios with VMAX and Lua scripting
- Performing performance analysis with VTune for VMAX Engine to speed up rendering
- Developing plugins for 3d Studio Max, Inventor and Solidworks to export 3d geometry to VMAX
- Optimizing exported models through collapsing of hierarchies and culling of hidden surfaces
- Simulating a SONAR with raytracing
- Integrating a Control System of an XLX ROV with VMAX
- Piloting a simulated ROV to verify accessibility
- Writing technical manuals in Microsoft Word for customers
- Developing a product visualizer for FET marketing in Unity3d

Projects:

Title: VMAX Editor

Image: <https://www.dropbox.com/s/kba5a9o0ht4tjhc/VMAXEditor.png?dl=0>

Description: A development environment to create subsea training scenarios and usability studies on subsea equipment.

Contributions:

UI - Implemented buttons, properties, and tree hierarchies in MFC and C++

Transformations – Implemented 3d matrix transformations for model and collision placement

Model Editing – Implemented hierarchy editing of models for geometric model editing and exporting

Model Optimization – Implemented occlusion culling algorithm for removal of nonviewable geometry

3rd Party Integrations – Integrated Scintilla scripting environment for Lua scripting

Title: VMAX Simulator

Promo: <https://www.f-e-t.com/subsea/software-and-control-system-solutions/vmax/>

Description: A simulator for training ROV pilots and engineering validation of offshore equipment.

Contributions:

Optimization – Hotspot analysis with VTune followed by performance improvements gained through shader data caching, multithreading various computations and data locking optimizations, in C++.

Title: SONAR Simulation

Demo: <https://youtu.be/Thxu5hPkv9g>

Description: A SONAR head simulation to communicate with a Kongsberg MS1000.

Contributions:

SONAR Simulation – Developed with real-time raytracing in C++, SIMD, Boost, and spatial partitions.

Title: VMAX Scenario Development

Description: 3d training scenarios for ROV pilots.

Contributions:

Simulation – Implemented training scenarios to simulate subsea equipment with VMAX Editor and scripting with Lua.

Piloting – Recording and verification by piloting virtual ROV for customer.

Title: XLX 101 VMAX Control System

Description: An ROV Control System to let the user pilot the simulated ROV with a full console of controls.

Contributions:

Control System – XLX 101 Control System Integration into VMAX. Developed with C++ and XML.

Title: VMAX Launcher

Description: A configuration tool used to manage various processes and machines during the simulation.

Contributions:

UI – Implemented user interface in C#

Executable Management – Implemented multi computer, process management and setup options for launching the VMAX Simulator with C# and XML.

Title: VMAX Player

Manual: <https://www.dropbox.com/s/it7sw26hfc7ub7n/VMAX%20Player%20Manual.pdf?dl=0>

Description: An application that plays recorded VMAX training scenarios.

Contributions:

UI – Implemented buttons, properties, in MFC and C++.

Technical Manual – wrote technical manual for application.

Title: Plugin for 3D Studio Max

Description: An add-on to 3d Studio Max to export model geometry into a format that is compatible with VMAX.

Contributions:

Model Exporter – Created C++, 3d Studio Max Software Development Kit, and Direct X, to export to .X format.

Title: Plugin for SolidWorks

Manual: <https://www.dropbox.com/s/gr52qhasbjdh52n/VMAX%20Solidworks%20DirectX%20Exporter%20Manual.pdf>

Description: An add-on to SolidWorks to export model geometry into a format that is compatible with VMAX.

Contributions:

Model Exporter – Created with C++, SolidWorks Software Development Kit, Direct X to export to .FBX and .X.

Model Optimization – Joining neighboring meshes, collapsing mesh hierarchies, removing hidden geometry.

Technical Manual – wrote technical manual for application.

Title: Plugin for Inventor

Manual: <https://www.dropbox.com/s/onoc8g1lzc833r7/VMAX%20Inventor%20Exporter%20Manual.pdf?dl=0>

Description: An add-on to Inventor to export model geometry into a format that is compatible with VMAX.

Contributions:

Model Exporter – Created with C++, Inventor Software Development Kit, Direct X to export to .FBX and .X.

Model Optimization – Joining neighboring meshes, collapsing mesh hierarchies, removing hidden geometry.

Technical Manual – wrote technical manual for application.

Title: Product Visualizer

Description: A 3d, interactive display of equipment to help customers find parts. Viewer could dissect multipart CAD models with the purpose of identifying and purchasing subparts.

Contributions:

WebGL Model Viewer – Created with Unity3d, and C#.

Perpetual Fx Creative, Addison, TX

Intern Game Programmer, May 2010 to August 2010

GUI development with Actionscript and Scaleform in Gamebryo for PS3.

University of North Texas, Denton, TX

Teaching Assistant, Sept 2008 to May 2010

Algorithms, Data Structures, Advanced Game Topics, Computer Graphics, Lab Instructor in Java & C++

Certifications**C++ Institute**

CPA-21-01 CPA - C++ Certified Associate Programmer

Committee on National Security Systems, National Standards

CNSS 4011: National Training Standard for Information Systems Security Professionals

CNSS 4013: National Training Standard for System Administrators in Information System Security

Education

University of North Texas, Denton, Texas

BS in Computer Science, Minor in Mathematics, Spring 2008

MS in Computer Science, Summer 2012

Skills

Operating Systems:

Windows, OSX, Linux

Programming Languages:

C++, C#, C, Lua, Java

Development Environments:

Microsoft Visual Studio, Unity 3d, Mono Development