

PHILIP WINSTON

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EXPERIENCE:

TOBEVA SOFTWARE, LLC, Winchester, VA

April 2020 - Present

My own consulting and contracting company.

ToneStone, Inc., Boston, MA

February 2021 - Present

Developing ground-up Meta Quest 2 interactive music-creation game in Unity. Worked with artists, designers, and other engineers to implement many individual game features, guide architecture. Mentoring junior developers.

The Chan Zuckerberg Initiative, LLC, Redwood City, CA

May 2020 - Dec 2020

Wrote a quadtree-based real-time rendering system for tiled display of large images. As part of Napari, an open-source multi-dimensional image viewer for Python.

CARMERA, Inc., Brooklyn, NY

April 2017 - April 2020

Startup in the self-driving car and mapping space.

Senior Software Engineer

Developed three generations of data pipelines in AWS. One pipeline processed LIDAR data and panoramic imagery, another system performed machine learning training with Tensorflow.

We used many AWS Services such as Step Functions, Batch, Lambda, ECS, SNS/SQS, S3, EC2. Also periodically contributed to a large C++ and Python codebase focused on computer vision and point cloud processing.

METAVR, Inc., Brookline, MA.

2011 – March 2017

Private commercial software company in the simulation industry.

Lead Software Engineer

Lead a team of 5 Engineers involved in 3 products, all using C++ and DirectX on Windows. All team members were 100% remote.

Some individual contributions:

- A clustering system in C++ using a hierarchical round-earth spatial subdivision.
- Internal performance metrics and video review web service using Python, Javascript, jQuery, jQuery UI, and AWS. Wrote a “video diff” feature using structural similarity (SSIM).
- On call for debugging hard bugs.

HOWARD HUGHES MEDICAL INSTITUTE, Ashburn, VA.

2009 – 2011

At the Janelia Research Campus which is dedicated to neuroscience research.

Senior Software Engineer

- Extended an existing interactive image-based tool to support arbitrarily large images.
- Python using OpenGL on Linux / MacOS. Rendered at 60Hz with background paging.
- Used to view image stacks as large as 46000x43000x1700 (3TB).

METAVR, Inc., Brookline, MA.

2006 – 2009

Private commercial software company in the simulation industry.

Senior Software Engineer

- Added features to the company's main product VRSG (Virtual Reality Scene Generator)
- Skinned Animation Feature allowed 1000+ characters on screen using GPU skinning

HARMONIX MUSIC SYSTEMS, INC., Cambridge, MA.

2003 – 2006

Video game studio which develops AAA console games

Lead Programmer on *Guitar Hero*, PlayStation 2 game published Fall 2005 by Red Octane

- Using C++ implemented 2D and 3D game elements.
- Coordinated with game programmers, system programmers, QA, design, other leads.
- Guitar Hero franchise had over \$1B in sales by January 2008

Programmer on *EyeToy: Antigrav*, PlayStation 2 game published Fall 2004 by Sony

- Wrote spatial sound effects, voice system, heads up displays, tutorial, world editor.

Build System Engineer

- Created a custom multi-project, multi-platform build system. Python/web based.

SENSABLE TECHNOLOGIES, INC., Woburn, MA.

1999 – 2003

Private commercial software company that developed "3D touch-enabled" CAD software

Senior Software Engineer

- Contributed to 5 product releases of FreeForm (V2 through V6) at a variety of levels
- Served on the 4-person Architecture Board; worked on an external API and plug-in architecture.
- Co-inventor on US Patent 6,671,651 3-D Selection and Manipulation with a Haptic Interface.

EDUCATION

B.S., Computer Science, HARVEY MUDD COLLEGE, Claremont, CA.

1991 – 1995