

# PHILIP WINSTON

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## SUMMARY:

I am looking for remote consulting or contracting work. I have 25 years of experience creating high performance interactive systems with C++ and Python. Most of my previous experience was in 3D Graphics, but recently have been working on cloud based data pipelines.

I am a big believer in cloud based computing. With AWS I've heavily used Step Functions, SNS/SQS, Lambda, Batch, ECS, but I'm interested in working with any major cloud provider. I strongly believe general software engineering skills can and should be applied to cloud computing.

I've worked remotely for 11 years and I'm an excellent communicator. I have a non-technical blog with 100,000+ views ([www.kmeme.com](http://www.kmeme.com)) and just started a new consulting site tobeva.com. I have just started learning Go and Rust which I believe complement Python nicely.

## EXPERIENCE:

CARMERA, Inc., Brooklyn, NY

April 2017 - present

*Startup in the self-driving car and mapping space.*

### Software Engineer

Developed three generations of data pipelines in AWS. One pipeline processes LIDAR data and panoramic imagery, another does machine learning training with Tensorflow. Using many AWS Services such as Step Functions, Batch, Lambda, ECS, SNS/SQS.

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

*This location is called Janelia Farm and 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.*

(I worked for MetaVR first from 2006-2009 and then again 2011-2017.)

**Senior Software Engineer**

- Added features to the company's main product VRSG (Virtual Reality Scene Generator)
- Skinned Animation Feature allowed 1000+ character 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 over 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 develops "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 [ . . . ] Haptic Interface.

UNC COMPUTER SCIENCE DEPARTMENT, Chapel Hill, NC.

1996 – 1999

*University Graphics and Image Research Laboratory*

- Created multi-threaded C++ on Windows which interfaced with custom hardware.
- Commercialized as the *HiBall Wide-Area Precision Tracker* by: [www.3rdtech.com](http://www.3rdtech.com).

**EDUCATION**

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

1991 – 1995