

# PHILIP WINSTON

Tobeva Software, LLC - tobeva.com

philip@tobeva.com | 265 RUBINETTE WAY WINCHESTER VA 22602 | (540) 303-1066

## SUMMARY:

I am looking for remote consulting or contracting work through my company Tobeva Software. I have 25 years of experience creating high performance interactive systems with C++ and Python. Most of my previous experience was related to 3D Graphics, but during the last three years I worked on several generations of cloud based data pipelines using Step Functions and other AWS services.

I've primarily worked with C++, Python and Javascript, but I've started learning Go and Rust as well. I have experience with everything from high level architecture to low-level performance critical code. I've worked remotely for more than ten years and I'm an excellent communicator.

## EXPERIENCE:

TOBEVA SOFTWARE, LLC. Winchester, VA April 2020 - Present  
*My own consulting and contracting company.*

**The Chan Zuckerberg Initiative, LLC.** Redwood City, CA May 2020 - Present  
Real-time rendering system for *Napari*, an open source multi-dimensional scientific image viewer written in Python. See [napari.org](http://napari.org).

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 did machine learning with Tensorflow. We used many AWS Services such as Step Functions, Batch, Lambda, ECS, SNS/SQS, S3, EC2. Also periodically contribute to a large C++ and Python code base 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+ 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 with a 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.

**EDUCATION**

B.S., Computer Science, HARVEY MUDD COLLEGE, Claremont, CA. 1991 – 1995