



## Education

**Carnegie Mellon University**, Pittsburgh, PA  
Ph. D. in Computer Science Candidate, advised by Kayvon Fatahalian

**Carnegie Mellon University**, Pittsburgh, PA  
B.S. Computer Science and Arts (Lighting Design), May 2014, University Honors

## Research

I am currently researching Creative Support Tools, which allow artists of all skill levels to perform their tasks more efficiently, more easily, and be more creative. I have been developing a creative support tool for theatrical lighting design that allows designers to explore lighting designs using image-defined visual objectives. This application is supported by Lumiverse, a lighting control framework I developed and presented at SXSW 2015. I am currently working on a creative support tool for a class of image filters called Photoshop Actions with Adobe Research.

### Lumiverse

2014-Present, Carnegie Mellon University

A software framework for creating lighting control applications. Developed in C++ and available to the public at [lumiverse.cs.cmu.edu](http://lumiverse.cs.cmu.edu). Presented at SXSW Interactive 2015.

Supported in part by funding from the Carnegie Mellon University Frank-Ratchye Fund for Art @ the Frontier.

### Co-Teaching Interaction and Expression using the Pausch Bridge Lighting (15-661)

Spring 2015 - Spring 2017, Carnegie Mellon University, Co-Taught with Cindy Limauro.

My lighting control framework will be available for students to use in their projects for this course.

### Augmented Reality Interaction with the Pausch Bridge, Carnegie Mellon University

With Kayvon Fatahalian, Spring 2013

Allowed users to finger paint lighting on the Pausch Bridge by touching the bridge panels on an iPad screen. Designed and implemented the program with advising from Kayvon, supported by SURG Grant.

Awarded the First Place Alcoa Undergraduate Research Award and the First Place Frank-Ratchye STUDIO for Creative Inquiry Award at the 2013 Meeting of the Minds Undergraduate Research Symposium.

## Work Experience

**Adobe Research**, San Francisco, CA

*Research Intern* (May - August 2017)

With Matt Fisher, Sylvain Paris, and Ersin Yumer. Developed a constraint-based search system for complex image filters called Photoshop Actions. This project is currently under development.

**Adobe Research**, Boston, MA

*Intern - Creative Technologies Lab* (June - August 2016)

With Sylvain Paris. Developed a system to facilitate lighting design exploration by applying image-derived visual objectives to the stage. This work has not been published yet.

**Microsoft Research**, Redmond, WA

*Intern - Natural Interaction Research* (June - September 2015)

Supervised by Andy Wilson. Developed prototype projector system that produced motion using 35mm slides.

**Carnegie Mellon University**, Pittsburgh, PA

Teaching Assistant for 15-462/662 Computer Graphics (Spring 2014), 15-466/666 Computer Game Programming (Fall 2013), 15-150 Principles of Functional Programming (Fall 2011)

**Electronic Theatre Controls**, Middleton, WI

*Student Help in R&D* (June - August 2013)

Developed networking applications for current lighting systems, developed validator for checking DDL files against current standard, updated internal libraries to comply with industry standards

**Autodesk**, Waltham, MA

*Software Architecture Intern - Revit* (June-August 2012)

Developed cross-platform cloud collaboration library for Windows, Mac, and iOS

**Blue Frog Gaming**, Akron, OH

*Software Engineering Intern* (May-August 2011)



Developed features for the Facebook games Stardrift Empires and Starfleet Commander with Ruby on Rails

## Theater

### **Carnegie Mellon School of Drama**

*L'etoile*, Lighting Designer, Dir. Greg Lehane, January 2014  
*Albert Herring*, Master Electrician, LD: Andrew Schmedake, October 2013  
*Mercury Soul*, Media Designer, Dir. Mason Bates, April 2013  
*Mud*, Lighting Designer, Dir. Asia Gagnon, April 2013  
*Changing Times*, Lighting Designer, Chor. John Garett Stoker, Dance Light January 2013  
*A Curious Case of Cruelty*, Lighting Designer, Chor. Harron Atkins, Dance Light January 2013  
*Dancing Bridge*, Lighting Designer, displayed on the Pausch Bridge, December 2012  
*Macbett*, Assistant Media Designer, MD: Dan Efros, December 2012  
*Working*, Lighting Designer, Dir. Ingrid Sonnichsen, September 2012  
*Les Enfants Terribles*, Assistant Master Electrician, ME: Jon Mark, May 2012  
*L'enfant et les Sortilèges*, Assistant Master Electrician, ME: Robert Kubisen, January 2012

### **Scotch 'n' Soda Theater, Carnegie Mellon University**

*The Drowsy Chaperone*, Sound Designer, April 2012  
*Urinetown*, Sound Tech Head, November 2011  
*Cabaret*, Assistant Sound Designer, April 2011  
*Boeing Boeing*, Lighting Designer, February 2010  
*What We Bury*, Lighting Designer, Dir. Olivia O'Connor, December 2010  
*The Rocky Horror Show*, Sound Design and Board Op., Dir. Nicholas Petrillo, October 2010

## Video

*CMU Buggy Races*, Camera Director and Live Editor, April 2014

## Games

**ARFpg**, Programmer (Spring 2016). A game about petting dogs, received GCS Gold Award  
**The Last Dragon**, Project Lead, Programmer, Designer (Spring 2014). 2D shooter, received GCS Gold Award  
**Pipes**, Project Lead, Programmer, Designer (Fall 2012). 2D tile-rotating puzzle game, received GCS Gold Award  
**Ice Cream Dragon**, Programmer, Designer (Spring 2012). 2D "Grand Theft Ice Cream," received GCS Gold Award  
**Merblade**, Designer (Spring 2012). Side-scrolling mermaid shooter, received GCS Gold Award  
**Bleatbeater**, Lighting and Shader Programmer (Fall 2012). Unity platformer about punching sheep  
**Alyesium Chronicles**, Project Lead, Programmer, Designer (Fall 2011). Fantasy vs. sci-fi turn-based strategy game  
**Parchment Dragon**, Project Lead, Designer, Programmer (Fall 2010). Vertically scrolling fantasy shooter

## Honors

ESA Computer and Video Game Scholarship Recipient (2010)  
Recipient of the Hannah Nguyen/Evan Shimizu "Consistency and All Around Excellence in Theatre"  
Scholarship from the Edina High School Thespians (2010)  
George Eastman Young Leaders Award, University of Rochester, Rochester NY (2009)