

DANIEL RITCHIE

dritchie.github.io · daniel_ritchie@brown.edu

EDUCATION

Stanford University

PhD, Computer Science

Dissertation: *Probabilistic Programming for Procedural Modeling and Design*

Advisors: Pat Hanrahan, Noah Goodman

Conferred September 2016

Stanford University

MS, Computer Science

Conferred April 2013

University of California Berkeley

BA, Computer Science

Conferred May 2010

EMPLOYMENT

Eliot Horowitz Assistant Professor

Brown University Computer Science Department

Providence, RI

2021 – Present

Assistant Professor

Brown University Computer Science Department

Providence, RI

2017 – 2021

Postdoctoral Researcher

Stanford University Computer Science Department

Stanford, CA

2016 – 2017

Research Intern

Adobe Creative Technologies Lab

San Francisco, CA

Summer 2011

Graduate Research Assistant

Stanford University Computer Science Department

Stanford, CA

2010 – 2016

Technical Director Intern

Pixar Animation Studios

Emeryville, CA

Summer 2009

Software Intern

Hewlett-Packard

Roseville, CA

Summer 2008

REFEREED

PUBLICATIONS

All publications listed below follow the author order conventions for visual computing (e.g. graphics, vision, machine learning): the first author is the primary implementer (typically a PhD student), and the last author is typically the direct supervisor of the first author and the principal investigator on the project. Middle authors vary in role, with students and interns typically listed before faculty and senior research scientists.

Annotation scheme for publications started while employed at Brown University (July 2017 onwards):

- **Blue bold text**: PhD student at Brown.
- **Purple bold text**: undergraduate or masters student at Brown.
- **Green bold text**: external PhD student whom Daniel mentored.
- **Orange bold text**: external undergraduate or masters student whom Daniel mentored.

CLIP-Sculptor: Zero-Shot Generation of High-Fidelity and Diverse Shapes from Natural Language Aditya Sanghi, [Rao Fu](#), Vivian Liu, Karl D.D. Willis, Hooman Shayani, Amir Hosein Khasahmadi, Srinath Sridhar, Daniel Ritchie *CVPR 2023*.

Unsupervised 3D Shape Reconstruction by Part Retrieval and Assembly. [Xianghao Xu](#), Paul Guerrero, Matthew Fisher, Siddhartha Chaudhuri, Daniel Ritchie. *CVPR 2023*.

ShapeCrafter: A Recursive Text-Conditioned 3D Shape Generation Model [Rao Fu](#), [Xiao Zhan](#), [Yiwen Chen](#), Daniel Ritchie, Srinath Sridhar *NeurIPS 2022*.

SHRED: 3D Shape Region Decomposition with Learned Local Operations. [R. Kenny Jones](#), [Aalia Habib](#), Daniel Ritchie. *SIGGRAPH Asia 2022*.

The Shape Part Slot Machine: Contact-based Reasoning for Generating 3D Shapes from Parts. [Kai Wang](#), Srinath Sridhar, Paul Guerrero, Vladimir Kim, Siddhartha Chaudhuri, Minhyuk Sung, Daniel Ritchie. *ECCV 2022*.

Unsupervised Kinematic Motion Detection for Part-segmented 3D Shape Collections. [Xianghao Xu](#), [Yifan Ruan](#), Srinath Sridhar, Daniel Ritchie. *SIGGRAPH 2022*.

The Neurally-Guided Shape Parser: Grammar-based Labeling of 3D Shape Regions with Approximate Inference. [R. Kenny Jones](#), [Aalia Habib](#), Rana Hanocka, Daniel Ritchie. *CVPR 2022*.

PLAD: Learning to Infer Shape Programs with Pseudo-Labels and Approximate Distributions. [R. Kenny Jones](#), [Homer Walke](#), Daniel Ritchie. *CVPR 2022*.

Learning to Infer Kinematic Hierarchies for Novel Object Instances. [Hameed Abdul-Rashid](#), [Miles Freeman](#), [Ben Abbatematteo](#), George Konidakis, Daniel Ritchie. *ICRA 2022*.

Roominoes: Generating Novel 3D Floor Plans From Existing 3D Rooms. [Kai Wang](#), [Xianghao Xu](#), [Leon Lei](#), [Natalie Lindsay](#), [Selena Ling](#), Angel X. Chang, Manolis Savva, Daniel Ritchie. *Symposium on Geometry Processing (SGP) 2021*.

ShapeMOD: Macro Operation Discovery for 3D Shape Programs. [R. Kenny Jones](#), [David Charatan](#), Paul Guerrero, Niloy Mitra, Daniel Ritchie. *ACM Transactions on Graphics (Proceedings of SIGGRAPH) 2021*.

Inferring CAD Modeling Sequences using Zone Graphs. [Xianghao Xu](#), [Wenzhe Peng](#), Chin-Yi Cheng, Karl D. D. Willis, Daniel Ritchie. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2021*.

Motion Annotation Programs: A Scalable Approach to Annotating Kinematic Articulations in Large 3D Shape Collections. [Xianghao Xu](#), [David Charatan](#), [Sonia Raychaudhuri](#), [Hanxiao Jiang](#), [Mae Heitmann](#), Vladimir Kim, Siddhartha Chaudhuri, Manolis Savva, Angel X. Chang, Daniel Ritchie. *International Conference on 3D Vision (3DV) 2020*.

Shape from Tracing: Towards Reconstructing 3D Object Geometry and SVBRDF Material from Images via Differentiable Path Tracing. [Purvi Goel](#), [Loudon Cohen](#), [James Guesman](#), [Vikas Thamizharasan](#), James Tompkin, Daniel Ritchie. *International Conference on 3D Vision (3DV)* 2020.

ShapeAssembly: Learning to Generate Programs for 3D Shape Structure Synthesis. [R. Kenny Jones](#), [Theresa Barton](#), [Xianghao Xu](#), [Kai Wang](#), [Ellen Jiang](#), Paul Guerrero, Niloy Mitra, Daniel Ritchie. *ACM Transactions on Graphics (Proceedings of SIGGRAPH Asia)* 2020.

GANHopper: Multi-Hop GAN for Unsupervised Image-to-Image Translation. [Wallace Lira](#), [Johannes Merz](#), Daniel Ritchie, Daniel Cohen-Or, Hao Zhang. *European Conference on Computer Vision (ECCV)* 2020.

Learning Generative Models of 3D Structures. Siddhartha Chaudhuri, Daniel Ritchie, Jiajun Wu, Kai Xu, Hao Zhang. *Eurographics 2020 State-of-the-Art Report*.

Learning Style Compatibility Between Objects in a Real-World 3D Asset Database. [Yifan Liu](#), [Ruolan Tang](#), Daniel Ritchie. *Pacific Graphics* 2019.

PlanIT: Planning and Instantiating Indoor Scenes with Relation Graph and Spatial Prior Networks. [Kai Wang](#), [Yu-an Lin](#), [Ben Weissmann](#), Manolis Savva, Angel X. Chang, Daniel Ritchie. *ACM Transactions on Graphics (Proceedings of SIGGRAPH)* 2019.

Fast and Flexible Indoor Scene Synthesis via Deep Convolutional Generative Models. Daniel Ritchie, [Kai Wang](#), [Yu-an Lin](#). *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)* 2019.

Learning to Describe Scenes with Programs. [Yunchao Liu](#), Zheng Wu, Daniel Ritchie, William T. Freeman, Joshua B. Tenenbaum, Jiajun Wu. *International Conference on Learning Representations (ICLR)* 2019.

Learning to Infer Graphics Programs from Hand-Drawn Images. [Kevin Ellis](#), Daniel Ritchie, Armando Solar-Lezama, Joshua B. Tenenbaum. *Conference on Neural Information Processing Systems (NeurIPS)* 2018. SPOTLIGHT PRESENTATION.

Improving Shape Deformation in Unsupervised Image-to-Image Translation [Aaron Gokaslan](#), [Vivek Ramanujan](#), Daniel Ritchie, Kwang In Kim, James Tompkin. *European Conference on Computer Vision (ECCV)* 2018.

Deep Convolutional Priors for Indoor Scene Synthesis [Kai Wang](#), Manolis Savva, Angel X. Chang, Daniel Ritchie. *ACM Transactions on Graphics (Proceedings of SIGGRAPH)* 2018.

ScanComplete: Large-Scale Scene Completion and Semantic Segmentation for 3D Scans Angela Dai, Daniel Ritchie, Martin Bokeloh, Scott Reed, Jürgen Sturm, Matthias Nießner. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)* 2018.

Example-based Authoring of Procedural Modeling Programs with Structural and Continuous Variability Daniel Ritchie, Sarah Jobalia, Anna Thomas *Proceedings of Eurographics* 2018.

An Improved Training Procedure for Neural Autoregressive Data Completion. Maxime Voisin, Daniel Ritchie. *NIPS 2017 Bayesian Deep Learning Workshop*.

Neurally-Guided Procedural Models: Amortized Inference for Procedural Graphics Programs using Neural Networks. Daniel Ritchie, Anna Thomas, Pat Hanrahan, Noah D. Goodman. *Conference on Neural Information Processing Systems (NIPS) 2016*.

C3: Lightweight Incrementalized MCMC for Probabilistic Programs using Continuations and Callsite Caching. Daniel Ritchie, Andreas Stuhlmüller, Noah D. Goodman. *International Conference on Artificial Intelligence and Statistics (AISTATS) 2016*.

Controlling Procedural Modeling Programs with Stochastically-Ordered Sequential Monte Carlo. Daniel Ritchie, Ben Mildenhall, Noah D. Goodman, and Pat Hanrahan. *ACM Transactions on Graphics (Proceedings of SIGGRAPH) 2015*.

Generating Design Suggestions under Tight Constraints with Gradient-based Probabilistic Programming. Daniel Ritchie, Sharon Lin, Noah D. Goodman, and Pat Hanrahan. *Proceedings of Eurographics 2015*. BEST PAPER HONORABLE MENTION.

Quicksand: A Lightweight Embedding of Probabilistic Programming for Procedural Modeling and Design. Daniel Ritchie. *The 3rd NIPS Workshop on Probabilistic Programming, 2014*.

First-class Runtime Generation of High-performance Types using Exotypes. Zach Devito, Daniel Ritchie, Matthew Fisher, Alex Aiken, and Pat Hanrahan. *Programming Language Design and Implementation (PLDI) 2014*.

Probabilistic Color-by-Numbers: Suggesting Pattern Colorizations Using Factor Graphs. Sharon Lin, Daniel Ritchie, Matthew Fisher, and Pat Hanrahan. *ACM Transactions on Graphics (Proceedings of SIGGRAPH) 2013*.

Example-based Synthesis of 3D Object Arrangements. Matthew Fisher, Daniel Ritchie, Manolis Savva, Thomas Funkhouser, and Pat Hanrahan. *ACM Transactions on Graphics (Proceedings of SIGGRAPH Asia) 2012*.

d.tour: Style-based Exploration of Design Example Galleries. Daniel Ritchie, Ankita Arvind Kejriwal, and Scott R. Klemmer. *ACM Symposium on User Interface Software and Technology (UIST) 2011*.

Dynamic Local Remeshing for Elastoplastic Simulation. Martin Wicke, Daniel Ritchie, Bryan M. Klingner, Sebastian Burke, Jonathan R. Shewchuk, and James F. O'Brien. *ACM Transactions on Graphics (Proceedings of SIGGRAPH) 2010*.

Interactive Simulation of Surgical Needle Insertion and Steering. Nuttapon Chentanez, Ron Alterovitz, Daniel Ritchie, Lita Cho, Kris K. Hauser, Ken Goldberg, Jonathan R. Shewchuk, and James F. O'Brien. *ACM Transactions on Graphics (Proceedings of SIGGRAPH) 2009*.

**TECHNICAL
REPORTS**

Learning Body-Aware 3D Shape Generative Models. Bryce Blinn, Alexander Ding, R. Kenny Jones, Manolis Savva, Srinath Sridhar, Daniel Ritchie. *arXiv:2112.07022, 2021*.

Deep Amortized Inference for Probabilistic Programs. Daniel Ritchie, Paul Horsfall, Noah D. Goodman. *arXiv:1610.05735, 2016.*

**INVITED
TALKS**

Learning to Represent Shapes as Programs
Symposium on Geometry Processing, *Summer School* July 2022

Programs as Representations for Inferring and Generating 3D Structures
Cornell University, *Graphics/Vision Seminar* March 2022

Conversations with Research Pioneers: Daniel Ritchie
Unity Technologies, *Conversations with Research Pioneers* December 2021

AI-assisted 3D Content Creation: Successes, Challenges, & Opportunities
Roblox, *Research Colloquium* December 2021

Learning to Infer and Generate Programs for 3D Shapes and Scenes
ICCV, *Holistic Structures for 3D Vision Workshop* October 2021
ICCV, *Structural and Compositional Learning on 3D Data Workshop* October 2021

Neurosymbolic Generative Models for Structured 3D Content
3DGV, *3D Geometry and Vision Seminar* February 2021

Learning Neurosymbolic 3D Models
PROBPROG, *International Conference on Probabilistic Programming* March 2020

Everything You Need to Know About Deep Fakes
Full Stack at Brown, *Hack@Home* October 2020

Neurosymbolic 3D Models: Learning to Generate 3D Shape Programs
GAMES, *Graphics and Mixed Environment Seminar* August 2020

Toward Synthesizing Training Data for 3D Scene Understanding
CVPR, *3D Scene Understanding Workshop* June 2020

From Neural to Neurosymbolic 3D Modeling
CVPR, *Neurosymbolic Visual Learning & Program Induction Workshop* June 2020

Neurosymbolic 3D Models
MIT, *Vision Seminar* March 2020

Learning to Generate 3D Structures
Brown Department of Biostatistics, *Deep Learning Seminar* February 2020

Deep Learning for Graph(ic)s
Simon Fraser University, *Visual Computing Group* December 2019

Learning to Generate Visual Structures
Carney Institute for Brain Science, *Lunch Seminar* October 2019

Indoor Scene Synthesis: Past, Present, and Future
Shenzhen University, *Visual Computing Summer School* July 2019

Probabilistic Programming
Brown ICERM, *Computer Vision Semester Program* February 2019

Virtual Indoor Scene Synthesis: Past, Present, and Future
MIT, *Graphics Lunch* December 2018

Toward Style-Aware Generative Models of Virtual Indoor Scenes
Wayfair LLC, *Computer Vision / Data Science Team* December 2018

Visual Program Induction
Brown Applied Math, *Pattern Theory Seminar* November 2018

Probabilistic Programming for Computer Graphics
MIT, *PROBPROG 2018* October 2018

Learning Procedural Modeling Programs from Examples
MIT, *New England Symposium on Graphics* April 2018
Microsoft Research Cambridge, *New England Machine Learning Day* May 2018

Learning from Large-Scale Synthetic 3D Scene Data
Brown University Data Science Initiative, *Datathon* March 2018

Inferring Graphics Programs
University of Washington, *ML+PL Workshop* February 2018

Learning and Inferring Graphics Programs
MIT, *Vision Seminar* September 2017

Creative AI for Computer Graphics (It's More Than Just Style Transfer)
Google Brain, *Magenta Group* January 2017

Probabilistic Programming for Procedural Modeling and Design
Adobe Systems, *Creative Technologies Lab* March 2016
Brown University, *Computer Science Department* February 2016
Harvey Mudd College, *Computer Science Department* February 2016
Yale University, *Computer Science Department* February 2016

PANELIST Advances in Software for Approximate Bayesian Inference. *NIPS 2016 Workshop on Advances in Approximate Bayesian Inference.*

TUTORIALS & WORKSHOPS **Learning to Generate 3D Shapes and Scenes** October 2022
Kai Wang, Akshay Gadi Patil, Angel X. Chang, Paul Guerrero, Daniel Ritchie, Manolis Savva
ECCV 2022 Workshop

Machine Learning in Computational Design September 2022
Andrew Spielberg, Caitlin Mueller, Lydian Chilton, Rafael Gomez-Bombarelli, Vladimir Kim, Daniel Ritchie
ICML 2022 Workshop

Learning to Generate 3D Shapes and Scenes June 2021
Manyi Li, Zhenpei Yang, Angel X. Chang, Siddhartha Chaudhuri, Daniel Ritchie, Manolis Savva
CVPR 2021 Workshop

Synthetic 3D Scene Datasets: Needs & Opportunities

August 2020

Daniel Ritchie, Angel Chang, Manolis Savva
SIGGRAPH 2020 Birds of a Feather

Learning 3D Generative Models

June 2020

Daniel Ritchie, Florian Golemo, Angel Chang, Siddhartha Chaudhuri, Aaron Courville,
Qixing Huang, Derek Nowrouzezahrai, Pedro O. Pinheiro, Sai Rajeswar, Manolis Savva,
David Vasquez, Kai Xu, Hao Zhang
CVPR 2020 Workshop

3D Scene Generation

June 2019

Angel Chang, Qixing Huang, Daniel Ritchie, Manolis Savva
CVPR 2019 Workshop

Learning Generative Models of 3D Structures

May 2019

Siddhartha Chaudhuri, Daniel Ritchie, Kai Xu, Hao Zhang
Eurographics 2019 Tutorial

TEACHING**Instructor**

Fall 2021 – 2022

Brown CSCI 1230: Introduction to Computer Graphics

Instructor

Fall 2018 – 2020

Brown CSCI 1470/2470: Deep Learning

Instructor

Spring 2018 – 2023

Brown CSCI 2240: Interactive Computer Graphics

Instructor

Fall 2017

Brown CSCI 2951-W: Creative Artificial Intelligence for Computer Graphics

Instructor

Summer 2016

DARPA Probabilistic Programming for Advanced Machine Learning Summer School

Course Assistant

Spring 2014

Stanford CS 348b: Image Synthesis Techniques

Course Assistant

Fall 2011

Stanford CS 148: Introduction to Computer Graphics and Imaging

Graduate Student Instructor

Fall 2009, Spring 2010

UC Berkeley CS 184: Foundations of Computer Graphics

Student Facilitator

Spring 2009 – Spring 2010

UC Berkeley Undergraduate Graphics Group

Tutor

Fall 2008

UC Berkeley Self-Paced Center

**RESEARCH
MENTORING****Current Students**

Kai Wang

Brown CS PhD

Russell (Kenny) Jones

Brown CS PhD

Xianghao Xu	Brown CS PhD
Aditya Ganeshan	Brown CS PhD
Arman Maesumi	Brown CS PhD
Rao Fu	Brown CS PhD
Yuanbo Li	Brown CS ScM (expected 2024)
Renhao Zhang	Brown CS ScM (expected 2024)
Yifan Ruan	Brown Math-CS ScB (expected 2023)
David Han	Brown CS ScB (expected 2023)
Sean Zhan	Brown CS + Applied Math + Econ ScB (expected 2023)
Paul Biberstein	Brown CS ScB (expected 2023)
Adrian Chang	Brown CS ScB (expected 2023)
Alana White	Brown CS + Visual Art ScB (expected 2023)
Alex Ding	Brown CS ScB (expected 2024)
Anh Truong	Brown CS ScB (expected 2024)
Jay Sarva	Brown CS ScB (expected 2024)
Krishi Saripalli	Brown APMA-CS ScB (expected 2024)
Neil Xu	Brown CS ScB (expected 2024)

Alumni

Adam Wang <i>Next position: Five Rings</i>	Brown CS + Applied Math ScB 2023
Bryce Blinn <i>Next position: PhD Student, USC</i>	Brown CS ScB + ScM 2022
Yuchen Zhou <i>Next position: Amazon</i>	Brown CS ScM 2022
Zhouqi Gong <i>Next position: Amazon</i>	Brown CS ScM 2022
Joshua Pierce <i>Next position:</i>	Brown CS ScM 2022
Caleb Trotz <i>Next position: Goldman Sachs</i>	Brown Math-CS ScB 2022

Aalia Habib <i>Next position: Adobe</i>	Brown CS ScB 2022
Vikas Thamizharasan <i>Next position: R&D Engineer, Activision</i>	Brown CS ScM 2022
Xiangyu Li <i>Next position:</i>	Brown CS ScM 2021
Selena Ling <i>Next position: PhD Student, University of Toronto</i>	Brown CS ScM 2021
David Charatan <i>Next position: Common Sense Machines</i>	Brown Computer Engineering ScB 2021
Andrew Peterson <i>Next position: Disney Animation</i>	Brown CS + Applied Math ScB, CS ScM 2021
Maggie Wu <i>Next position: Microsoft</i>	Brown CS + Econ ScB 2021
Homer Walke <i>Next position: PhD Student, UC Berkeley</i>	Brown CS ScB 2021
Theresa Barton <i>Next position: The New York Times</i>	Brown CS ScM 2021
Naveen Srinivasan <i>Next position: Amazon Lab126</i>	Brown CS ScB + ScM 2020
Brian Oppenheim <i>Next position: Google</i>	Brown CS ScB 2020
Brad Guesman <i>Next position: NVIDIA</i>	Brown CS AB + Physics AB 2020
Miles Freeman <i>Next position: Winnie</i>	Brown CS + Applied Math ScB 2020
Siqi Wang <i>Next position: PhD Student, Boston University</i>	Brown CS ScM 2020
Loudon Cohen <i>Next position: NVIDIA</i>	Brown CS ScB + ScM 2020
Purvi Goel <i>Next position: PhD Student, Stanford University</i>	Brown CS ScB + ScM 2020
Natalie Lindsay <i>Next position: Apple</i>	Brown CS ScB + ScM 2020
Leon Lei <i>Next position: Amazon</i>	Brown CS ScB + ScM 2020

Ellen Jiang <i>Next position: Google Brain, Big Picture Group</i>	Brown CS ScB 2020
Ruolan Tang <i>Next position: Two Sigma</i>	Brown CS ScM 2019
Ben Weissmann <i>Next position: Down Dog</i>	Brown CS ScB 2019
Mae Heitmann <i>Next position: AirBnB</i>	Brown Math+CS ScB 2019
Montana Fowler <i>Next position: PhD Student, UC Santa Cruz</i>	Brown CS AB + Visual Art AB 2019
Yu-An (Andy) Lin <i>Next position: Microsoft</i>	Brown ECE ScM 2018
Yifan Liu <i>Next position: Google</i>	Brown CS ScM 2018
Shreya Shankar <i>Next position: Machine Learning Engineer, Viaduct</i>	Stanford CS BS 2019
Maxime Voisin <i>Next position: Research Assistant, Stanford University</i>	Stanford MS&E MS 2018
Anna Thomas <i>Next position: Masters Student, University of Cambridge (Churchill Scholar)</i>	Stanford CS BS 2018
Sarah Jobalia <i>Next position: Microsoft</i>	Stanford CS MS 2018
Ben Mildenhall <i>Next position: PhD Student, UC Berkeley</i>	Stanford CS BS 2015

Visitors

Hameed Abdul-Rashid <i>Home institution: University of Southern Mississippi</i>	Visiting Researcher Summer 2019
--	---------------------------------

External Thesis Committees

Wenzhe Peng <i>MIT Department of Architecture</i>	2022
--	------

FUNDING

Adobe Inc. Unrestricted Gifts Sole PI. \$99,000	2020 – 2022
NSF REU Site #2150184 Artificial Intelligence for Computational Creativity	2021

Sole PI. \$313,000

Google exploreCSR

2020

Unrestricted Gift

Co-PIs: James Tompkin, Jeff Huang, Amy Greenwald. \$18,000

Autodesk Inc.

2020 – 2021

Unrestricted Gifts

Sole PI. \$60,000

NSF CCRI Planning #2016532

2020

A Community-Standard, Large-Scale Synthetic 3D Scene Dataset for Scene Analysis and Synthesis

Sole PI. \$50,000

NSF CAREER #1941808

2020

Learning Neurosymbolic 3D Models

Sole PI. \$549,999

NSF CHS Small #1907547

2019

Learning to Automatically Design Interior Spaces

Sole PI. \$498,333

DARPA GAILA HR00111990064

2019

Cognitively-Motivated Word Learning in Embodied Virtual Agents

Co-PIs: Ellie Pavlick, Roman Fieman, Stefanie Tellex, Carsten Eickhoff. \$954,509

Brown University OVRP Research Seed Fund Award

2019

Building a Large Dataset of Articulated 3D Object Models

Sole PI. \$42,500

NSF CRII #1753684

2018

Learning Procedural Modeling Programs for Computer Graphics from Examples

Sole PI. \$175,000

**AWARDS &
HONORS**

Eliot Horowitz Assistant Professorship

2021

NSF CAREER Award

2020

Eurographics Best Paper Honorable Mention

2015

Stanford Graduate Fellowship

2010

UC Berkeley EECS Departmental Citation

2010

UC Berkeley Computer Science Highest Achievement Award

2010

CRA Outstanding Undergraduate Researcher Honorable Mention

2010

UC Berkeley Edward Frank Kraft Scholarship

2007

PROFESSIONAL SERVICE **Program Committee Member / Area Chair**

SIGGRAPH: 2021, 2022

SIGGRAPH Asia: 2018, 2019

SIGGRAPH Asia Courses: 2020

NeurIPS: 2019

ICLR: 2021, 2023

Eurographics: 2020 – 2023

Conflict of Interest Coordinator

SIGGRAPH Asia: 2020

Conference Proceedings Reviewer

SIGGRAPH: 2016 – 2022

SIGGRAPH Asia: 2016 – 2022

CVPR: 2019 – 2022

UIST: 2016

NeurIPS: 2016, 2018, 2019

Eurographics: 2017 – 2019

Graphics Interface: 2019

ICCV: 2019, 2021

ECCV: 2020

ICML: 2018

ICLR: 2018

Journal Editor

Computer Graphics Forum (Associate Editor): 2021 – 2024

Journal Reviewer

ACM TOG: 2019, 2022

TVCG: 2016, 2019, 2021

Computer Graphics Forum: 2017, 2020, 2022

Pattern Recognition: 2019

Computer Aided Design: 2016

Transactions on Games: 2020

IEEE TPAMI: 2022

Grant Reviewer

NSF Proposal Reviewer: 2018, 2020, 2021

DEPARTMENT SERVICE	PhD Admissions Committee Member	2017 – 2021
	Diversity & Inclusion Committee Chair	2021 – 2023
PATENTS	Methods and Apparatus for Comic Creation (US 20130073952 A1)	
FILM CREDITS	Day & Night	2010
	Pixar Animation Studios	
	<i>Shading Technical Director</i>	