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

Associate Professor	Providence, RI
Brown University Computer Science Department	2024 – Present
Eliot Horowitz Assistant Professor	Providence, RI
Brown University Computer Science Department	2021 – 2024
Assistant Professor	Providence, RI
Brown University Computer Science Department	2017 – 2021
Postdoctoral Researcher	Stanford, CA
Stanford University Computer Science Department	2016 – 2017
Research Intern	San Francisco, CA
Adobe Creative Technologies Lab	Summer 2011
Graduate Research Assistant	Stanford, CA
Stanford University Computer Science Department	2010 – 2016
Technical Director Intern	Emeryville, CA
Pixar Animation Studios	Summer 2009
Software Intern	Roseville, CA
Hewlett-Packard	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.

PoissonNet: A Local-Global Approach for Learning on Surfaces. Arman Maesumi, Tanish Makadia, Thibault Grouiex, Vladimir Kim, Daniel Ritchie, Noam Aigerman. *SIGGRAPH Asia 2025*.

MiGumi: Making Tightly Coupled Integral Joints Millable. Aditya Ganeshan, Kurt Fleischer, Wenzel Jakob, Ariel Shamir, Daniel Ritchie, Takeo Igarashi, Maria Larsson. *SIGGRAPH Asia 2025*.

Procedural Scene Programs for Open-Universe Scene Generation: LLM-Free Error Correction via Program Search. Maxim Gumin, Do Heon Han, Seung Jean Yoo, Aditya Ganeshan, R. Kenny Jones, Kailiang Fu, Rio Aguina-Kang, Stewart Morris, Daniel Ritchie. *SIGGRAPH Asia 2025*.

PartComposer: Learning and Composing Part-Level Concepts from Single-Image Examples. Junyu Liu, R. Kenny Jones, Daniel Ritchie. *SIGGRAPH Asia 2025*.

Diorama: Unleashing Zero-shot Single-view 3D Scene Modeling. Qirui Wu, Denys Iliash, Daniel Ritchie, Manolis Savva, Angel X. Chang. *ICCV 2025*. Highlight.

Pattern Analogies: Learning to Perform Programmatic Image Edits by Analogy. Aditya Ganeshan, Thibaul Groueix, Paul Guerrero, Radomír Měch, Matthew Fisher, Daniel Ritchie. *CVPR 2025*.

GigaHands: A Massive Annotated Dataset of Bimanual Hand Activities. Rao Fu, Dingxi Zhang, Alex Jiang, Wanjia Fu, Austin Funk, Daniel Ritchie, Srinath Sridhar. *CVPR 2025*. Highlight.

Learning to Edit Visual Programs with Self-Supervision. R. Kenny Jones, Renhao Zhang, Aditya Ganeshan, Daniel Ritchie. *NeurIPS 2024*.

ParSEL: Parameterized Shape Editing with Language. Aditya Ganeshan, Ryan Y. Huang, Xianghao Xu, R. Kenny Jones, Daniel Ritchie. *SIGGRAPH Asia 2024*.

R3DS: Reality-linked 3D Scenes for Panoramic Scene Understanding. Qirui Wu, Sonia Raychaudhuri, Daniel Ritchie, Manolis Savva, Angel X. Chang. *ECCV 2024*.

One Noise to Rule Them All: Learning a Unified Model of Spatially-Varying Noise Patterns. Arman Maesumi, Dylan Hu, Krishi Saripalli, Vladimir Kim, Matthew Fisher, Sören Pirk, Daniel Ritchie. *SIGGRAPH 2024*.

Learning to Infer Generative Template Programs for Visual Concepts. R. Kenny Jones, Siddhartha Chaudhuri, Daniel Ritchie. *ICML 2024*.

CharacterMixer: Rig-Aware Interpolation of 3D Characters. Xiao Zhan, Rao Fu, Daniel Ritchie. *Eurographics 2024*.

PossibleImpossibles: Exploratory Procedural Design of Impossible Structures. Yuanbo Li, Tianyi Ma, Zaineb Aljumayaat, Daniel Ritchie. *Eurographics 2024*.

Generalizing Single-View 3D Shape Retrieval to Occlusions and Unseen Objects. Qirui Wu, Daniel Ritchie, Manolis Savva, Angel X. Chang. *International Conference on 3D Vision (3DV) 2024*.

Editing Motion Graphics Videos via Motion Vectorization & Transformation. Sharon Zhang, Jiaju Ma, Daniel Ritchie, Jiajun Wu, Maneesh Agrawala. *ACM Transactions on Graphics (Proceedings of SIGGRAPH Asia) 2023*.

Explorable Mesh Deformation Subspaces from Unstructured 3D Generative Models. Arman Maesumi, Paul Guerrero, Vladimir Kim, Matthew Fisher, Siddhartha Chaudhuri, Noam Aigerman, Daniel Ritchie. *SIGGRAPH Asia 2023*.

Improving Unsupervised Visual Program Inference with Code Rewriting Families. Aditya Ganeshan, R. Kenny Jones, Daniel Ritchie. *ICCV 2023*. ORAL PRESENTATION.

ShapeCoder: Discovering Abstractions for Visual Programs from Unstructured Primitives. R. Kenny Jones, Paul Guerrero, Niloy Mitra, Daniel Ritchie. *ACM Transactions on Graphics (Proceedings of SIGGRAPH) 2023*.

Neurosymbolic Models for Computer Graphics Daniel Ritchie, Paul Guerrero, R. Kenny Jones, Niloy Mitra, Adriana Schulz, Karl D. D. Willis, Jiajun Wu *Eurographics 2023 State-of-the-Art Report*.

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 Konidaris, 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 Patttern 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. Nuttapong 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	**CLIPtortionist: Zero-shot Text-driven Deformation for Manufactured 3D Shapes**. Xianghao Xu, Srinath Sridhar, Daniel Ritchie. *arXiv:2410.15199, 2024*.

Creating Language-driven Spatial Variations of Icon Images. Xianghao Xu, Aditya Ganeshan, Karl D. D. Willis, Yewen Pu, Daniel Ritchie. *arXiv:2405.19636, 2024*.

Open-Universe Indoor Scene Generation using LLM Program Synthesis and Uncurated Object Databases. Rio Aguina-Kang, Maxim Gumin, Do Heon Han, Stewart Morris, Seung Jean Yoo, Aditya Ganeshan, R. Kenny Jones, Qiuhong Anna Wei, Kailiang Fu, Daniel Ritchie. *arXiv:2403.09675, 2024*.

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	**CAD Generative Models: Past, Present, and Future(?)** Toyota Research Institute, *Invited Talk*	October 2025
	Programmatic Generative Visual Concepts CVPR, *Second Workshop on Visual Concepts*	June 2025
	Neurosymbolic Modeling Paradigms for Computer Graphics INRIA, *GraphDeco Retreat*	October 2024

Deep Learning for 3D Geometry
Symposium on Geometry Processing, *Graduate School*   June 2024

Neurosymbolic Models for 3D Content Creation
ICCV, *AI for 3D Content Creation Workshop*   October 2023

Inferring Programs for 3D Shapes without Supervision
ICCV, *SHARP Workshop - Solving CAD History and pArameters Recovery from Point clouds and 3D scans*   October 2023

Neurosymbolic Models for 3D Generative AI
ICML, *The Role of Generative AI in Shaping the Next Generation of the Metaverse*
July 2023

Learning to Represent Shapes as Programs
Symposium on Geometry Processing, *Graduate 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 Colloqium*   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*   Februrary 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

Probablistic 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*   Feburary 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   Seminar #3: Visual Reasoning. *COGGRAPH 2024.*

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

TUTORIALS &   **CounterGRAPH 2: Workshop on Social-Technical Graphics**   October 2025
WORKSHOPS   Theodore Kim, Victor Flávio De Andrade Araujo, Octave Crespel, Wojciech Jarosz,

Daniel Ritchie, Silvia Sellán, Raqi Syed, Marta Wilczkowiak

AI for 3D Content Creation   October 2025
Hezhen Hu, Georgios Pavlakos, Despoina Paschalidou, Nikos Kolotouros, Davis Rempe,
Angel Xuan Chang, Kai Wang, Amlan Kar, Kaichun Mo, Daniel Ritchie, Leonidas
Guibas
ICCV 2025 Workshop

LLMs in the Technical Papers Review Process   August 2025
Daniel Ritchie, Rana Hanocka
SIGGRAPH 2025 Birds of a Feather

Countering Racial Bias in Computer Graphics Research   August 2025
Theodore Kim, Daniel Aliaga, Curtis Andrus, Ana Dodik, Daniel Ritchie, Oded Stein,
Chenxi Liu, Victor Araujo
SIGGRAPH 2025 Birds of a Feather

AI for 3D Content Creation   September 2024
Despoina Paschalidou, Georgios Pavlakos, Davis Rempe, Angel Xuan Chang, Kai
Wang, Amlan Kar, Daniel Ritchie, Kaichun Mo, Manolis Savva, Paul Guerrero, Siyu
Tang, Leonidas Guibas
ECCV 2024 Workshop

Mentoring PhD Students in Computer Graphics   July 2024
Daniel Ritchie
SIGGRAPH 2024 Birds of a Feather

AI for 3D Generation   June 2024
Despoina Paschalidou, Georgios Pavlakos, Davis Rempe, Angel Xuan Chang, Kai
Wang, Amlan Kar, Daniel Ritchie, Kaichun Mo, Manolis Savva, Paul Guerrero, Siyu
Tang, Leonidas Guibas
CVPR 2024 Workshop

3D Vision and Modeling Challenges in eCommerce   October 2023
Angel Chang, Jasmine Collins, Huan Fu, Francesca Gil-Ureta, Erhan Gundogdu, Yim-
ing Qian, Daniel Ritchie, Javier Romero, Jian Wang, Fenggen Yu, Xu Zhang
ICCV 2023 Workshop

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 – 2025
Brown CSCI 1230: Introduction to Computer Graphics

Instructor   Fall 2018 – 2020
Brown CSCI 1470/2470: Deep Learning

Instructor   Spring 2018 – 2025
Brown CSCI 2240: Advanced 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

Aditya Ganeshan   Brown CS PhD

Arman Maesumi   Brown CS PhD

Maxim Gumin	Brown CS PhD
Yuanbo Li	Brown CS PhD
Jason Liu	Brown CS PhD
Ben Ahlbrand	Brown CS PhD
Xiaoxi Yang	Brown CS Research Assistant
Tianxing Ji	Brown CS ScM (expected 2026)
Chengye Hao	Brown CS ScM (expected 2026)
Pranav Sankar	Brown CS ScM (expected 2027)
Henry Yin	Brown CS ScM (expected 2027)
Yuyan (Una) Wu	Brown CS ScM (expected 2027)
Do Heon (Bryan) Han	Brown CS Undergrad (expected 2026)
Ryan Huang	Brown CS Undergrad (expected 2026)
Nirayka Monga	Brown CS Undergrad (expected 2026)
Tanish Makadia	Brown CS Undergrad (expected 2026)
Yuqiao Guan	Brown CS Undergrad (expected 2026)
Ryan Lee	Brown CS Undergrad (expected 2026)

Alumni

Russell (Kenny) Jones   Brown CS PhD 2025
Next position: Postdoc, Stanford University

Xianghao Xu   Brown CS PhD 2024
Next position: Waymo

Kai Wang   Brown CS PhD 2023
Next position: Postdoc, Amazon

Zihan Zhu   Brown CS ScM 2025
Next position: PhD Student, University of Montreal

Junyu Liu   Brown CS ScM 2025
Next position: PhD Student, EPFL

Ruiqi (Ray) Xu   Brown CS ScM 2025
Next position: PhD Student, Purdue University

Stewart Morris   Brown CS Undergrad 2025
Next position: CS curriculum development, VA middle school

Zack Amiton   Brown CS Undergrad 2025
Next position: Duolingo

Jean Yoo   Brown CS Undergrad 2025
Next position: Basis AI

Chengfan Li   Brown CS ScM 2025
Next position: TikTok

Vivian Lu   Brown CS Undergrad + ScM 2025
Next position: Bloomberg

Krishi Saripalli   Brown CS Undergrad 2024
Next position: Bezi

Dylan Hu   Brown CS Undergrad 2024
Next position: Microsoft

Jay Sarva   Brown CS Undergrad 2024
Next position: Databricks

Sarah Roberts   Brown CS Undergrad 2024
Next position: Chewonki Foundation

Anh Truong   Brown CS Undergrad 2024
Next position: PhD Student, MIT

Renhao (Norman) Zhang   Brown CS ScM 2024
Next position: PhD Student, UMass Amherst

Alex Ding   Brown CS Undergrad + ScM 2024
Next position: Jane Street

Neil Xu   Brown CS Undergrad 2024
Next position: Gecko Robotics

Alex Wang   Brown CS Undergrad 2024
Next position: ScM Student, Brown University

Cal Nightingale   Brown CS Undergrad 2024
Next position: Gradient Health

Coco Kaleel   Brown CS Undergrad 2024
Next position: Analog Devices

Chloe Yeh   Brown CS Undergrad 2024
Next position: InterSystems

Yifan Ruan   Brown CS Undergrad 2023
Next position: PhD Student, University of Toronto

Xiao (Sean) Zhan *Next position: PhD Student, MIT*	Brown CS Undergrad 2023
Paul Biberstein *Next position: PhD Student, UPenn*	Brown CS Undergrad 2023
Adrian Chang *Next position: Vision Systems, Inc.*	Brown CS Undergrad 2023
David Han *Next position: Roblox*	Brown CS Undergrad 2023
Alana White *Next position: Netflix*	Brown CS Undergrad 2023
Adam Wang *Next position: Five Rings*	Brown CS Undergrad 2023
Bryce Blinn *Next position: PhD Student, USC*	Brown CS Undergrad + ScM 2022
Yuchen Zhou *Next position: Amazon*	Brown CS ScM 2022
Zhouqi Gong *Next position: Amazon*	Brown CS ScM 2022
Joshua Pierce *Next position:*	Brown CS ScM 2022
Caleb Trotz *Next position: Goldman Sachs*	Brown CS Undergrad 2022
Aalia Habib *Next position: Adobe*	Brown CS Undergrad 2022
Vikas Thamizharasan *Next position: R&D Engineer, Activision*	Brown CS ScM 2022
Xiangyu Li *Next position:*	Brown CS ScM 2021
Selena Ling *Next position: PhD Student, University of Toronto*	Brown CS ScM 2021
David Charatan *Next position: Common Sense Machines*	Brown CS Undergrad 2021
Andrew Peterson *Next position: Disney Animation*	Brown CS Undergrad + ScM 2021
Maggie Wu *Next position: Microsoft*	Brown CS Undergrad 2021

Homer Walke	Brown CS Undergrad 2021
Next position: PhD Student, UC Berkeley	
Theresa Barton	Brown CS ScM 2021
Next position: The New York Times	
Naveen Srinivasan	Brown CS Undergrad 2020
Next position: Amazon Lab126	
Brian Oppenheim	Brown CS Undergrad 2020
Next position: Google	
Brad Guesman	Brown CS Undergrad 2020
Next position: NVIDIA	
Miles Freeman	Brown CS Undergrad 2020
Next position: Winnie	
Siqi Wang	Brown CS ScM 2020
Next position: PhD Student, Boston University	
Loudon Cohen	Brown CS Undergrad + ScM 2020
Next position: NVIDIA	
Purvi Goel	Brown CS Undergrad + ScM 2020
Next position: PhD Student, Stanford University	
Natalie Lindsay	Brown CS Undergrad + ScM 2020
Next position: Apple	
Leon Lei	Brown CS Undergrad + ScM 2020
Next position: Amazon	
Ellen Jiang	Brown CS Undergrad 2020
Next position: Google Brain	
Ruolan Tang	Brown CS ScM 2019
Next position: Two Sigma	
Ben Weissmann	Brown CS Undergrad 2019
Next position: Down Dog	
Mae Heitmann	Brown CS Undergrad 2019
Next position: AirBnB	
Montana Fowler	Brown CS Undergrad 2019
Next position: PhD Student, UC Santa Cruz	
Yu-An (Andy) Lin	Brown ECE ScM 2018
Next position: Microsoft	
Yifan Liu	Brown CS ScM 2018
Next position: Google	

Shreya Shankar	Stanford CS Undergrad 2019

Next position: Machine Learning Engineer, Viaduct

Maxime Voisin	Stanford MS&E MS 2018

Next position: Research Assistant, Stanford University

Anna Thomas	Stanford CS Undergrad 2018

Next position: Masters Student, University of Cambridge (Churchill Scholar)

Sarah Jobalia	Stanford CS MS 2018

Next position: Microsoft

Ben Mildenhall	Stanford CS Undergrad 2015

Next position: PhD Student, UC Berkeley

Visitors

Nicole Ge	Visiting Undergraduate Researcher Summer 2025

Home institution: Harvey Mudd College

Aruna Anderson	Visiting Undergraduate Researcher Summer 2025

Home institution: Loyal Marymount University

Henro Kriel	Visiting PhD Student Nov - Dec 2024

Home institution: Inria

Clara Fee	Visiting Undergraduate Researcher Summer 2024

Home institution: Bryn Mawr College

Caitlin Gong	Visiting Undergraduate Researcher Summer 2024

Home institution: Vassar College

Rio Aguina-Kang	Visiting Undergraduate Researcher Summer 2023

Home institution: UCSD

Imani Finkley	Visiting Undergraduate Researcher Summer 2022

Home institution: Cornell University

Hameed Abdul-Rashid	Visiting Undergraduate Researcher Summer 2019

Home institution: University of Southern Mississippi

External Thesis Committees

Wenzhe Peng	2022

MIT Department of Architecture

FUNDING	**NSF HCC Small #2519772**	10/2025 – 09/2028

Open-vocabulary Neurosymbolic 3D Models
Sole PI. $477,651

NSF REU Site #2447190	06/2025 – 05/2028

Artificial Intelligence for Computational Creativity

Sole PI. $364,562

Adobe Inc.   2020 – 2025
Unrestricted Gifts
Sole PI. $164,000

Roblox Corporation   2024 – 2024
Unrestricted Gifts
Sole PI. $60,000

Google exploreCSR   2024 – 2027
Unrestricted Gift
Co-PI: Malte Schwarzkopf. $32,000

NSF CISE-ANR HCC Small #2315354   10/2023 - 09/2026
Learning to Translate Freehand Design Drawings into Parametric CAD Programs
Co-PI: Adrien Bousseau (INRIA). $599,999

NSF REU Site #2150184   03/2022 – 02/2025
Artificial Intelligence for Computational Creativity
Sole PI. $313,000

Google exploreCSR   2021 – 2023
Unrestricted Gift
Co-PIs: James Tompkin, Jeff Huang, Amy Greenwald. $18,000

Autodesk Inc.   2020 – 2024
Unrestricted Gifts
Sole PI. $170,000

NSF CCRI Planning #2016532   10/2020 – 03/2024
A Community-Standard, Large-Scale Synthetic 3D Scene Dataset for Scene Analysis
and Synthesis
Sole PI. $50,000

NSF CAREER #1941808   04/2020 – 03/2025
Learning Neurosymbolic 3D Models
Sole PI. $549,999

NSF CHS Small #1907547   10/2019 – 06/2024
Learning to Automatically Design Interior Spaces
Sole PI. $498,333

DARPA GAILA HR00111990064   07/2019 – 12/2020
Cognitively-Motivated Word Learning in Embodied Virtual Agents
Co-PIs: Ellie Pavlick, Roman Fieman, Stefanie Tellex, Carsten Eickhoff. $954,509

Brown University OVPR Research Seed Fund Award   2019
Building a Large Dataset of Articulated 3D Object Models
Sole PI. $42,500

NSF CRII #1753684   05/2018 – 04/2021
Learning Procedural Modeling Programs for Computer Graphics from Examples
Sole PI. $175,000

AWARDS &	Eliot Horowitz Assistant Professorship	2021
HONORS	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 **Program Chair**
SERVICE 3DV: 2026

Program Committee Member / Area Chair
SIGGRAPH: 2021, 2022
SIGGRAPH Asia: 2018, 2019, 2023, 2024
SIGGRAPH Asia Courses: 2020
SIGGRAPH Asia Papers Sort Committee: 2025
NeurIPS: 2019
ICLR: 2021, 2023
Eurographics: 2020 – 2024
Eurographics State-of-the-Art Reports: 2025

Conflict of Interest Coordinator
SIGGRAPH Asia: 2020

Conference Proceedings Reviewer
SIGGRAPH: 2016 – 2025
SIGGRAPH Asia: 2016 – 2024
CVPR: 2019 – 2025
UIST: 2016
NeurIPS: 2016, 2018, 2019
Eurographics: 2017 – 2019
Graphics Interface: 2019
ICCV: 2019, 2021, 2025
ECCV: 2020
ICML: 2018
ICLR: 2018

Journal Editor
Computer Graphics Forum (Associate Editor): 2021 – 2025
IEEE TVCG (Associate Editor): 2023 – 2024

Journal Reviewer
ACM TOG: 2019, 2022
IEEE 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, 2025

Other Reviews
SIGGRAPH Thesis Fast Forward: 2024

UNIVERSITY	Sophomore Advising	2022 – 2023
SERVICE	First-Year Advising	2021 – 2022, 2025 – 2026

DEPARTMENT	Faculty Search Chair	2023 – 2024
SERVICE	Diversity & Inclusion Committee Chair	2021 – 2023
	Diversity & Inclusion Committee Member	2021 – Present
	Undergraduate Concentration Advising	2018 – Present
	PhD Admissions Committee Member	2017 – 2024

PATENTS   **Methods and Apparatus for Comic Creation** (US 20130073952 A1)

FILM CREDITS	**Day & Night**	2010
	Pixar Animation Studios	
	Shading Technical Director	