

R. Kenny Jones

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RESEARCH INTERESTS

My research sits at the intersection of graphics, vision, and machine learning. I develop methods that learn to represent visual data with programs and discover abstractions that make those programs useful for people and machines.

POSITION

Postdoctoral Scholar

Stanford University

Advisors: Maneesh Agrawala and Jiajun Wu

Stanford, CA

2025 – Present

EDUCATION

Brown University

PhD, Computer Science

Dissertation: *Neurosymbolic Methods for Shape Analysis and Generation*

Advisor: Daniel Ritchie

Conferred May 2025

Brown University

MS, Computer Science

Conferred May 2021

Williams College

BA, Computer Science and English

Magna Cum Laude, Phi Beta Kappa

Conferred May 2017

EMPLOYMENT

Research Intern

Adobe Creative Intelligence Lab

San Jose, CA

Summer 2022

Machine Learning Engineer

Facebook

Menlo Park, CA

2017 – 2019

PUBLICATIONS

ShapeLib: Designing a Library of Programmatic 3D Shape Abstractions with Large Language Models

R. Kenny Jones, Paul Guerrero, Niloy J. Mitra, Daniel Ritchie

ACM Transactions on Graphics, 2026

Self-Consistency for LLM-Based Motion Trajectory Generation and Verification

Jiaju Ma, R. Kenny Jones, Jiajun Wu, Maneesh Agrawala

Computer Vision and Pattern Recognition (CVPR), 2026

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

Learning to Edit Visual Programs with Self-Supervision

R. Kenny Jones, Renhao Zhang, Aditya Ganeshan, Daniel Ritchie
Neural Information Processing Systems (NeurIPS), 2024

ParSEL: Parameterized Shape Editing with Language

Aditya Ganeshan, Ryan Y. Huang, Xianghao Xu, R. Kenny Jones, Daniel Ritchie
ACM Transactions on Graphics (Proceedings of SIGGRAPH Asia), 2024

Learning to Infer Generative Template Programs for Visual Concepts

R. Kenny Jones, Siddhartha Chaudhuri, Daniel Ritchie
International Conference on Machine Learning (ICML), 2024

Improving Unsupervised Visual Program Inference with Code Rewriting Families

Aditya Ganeshan, R. Kenny Jones, Daniel Ritchie
International Conference on Computer Vision (ICCV), 2023, **ORAL**

ShapeCoder: Discovering Abstractions for Visual Programs from Unstructured Primitives

R. Kenny Jones, Paul Guerrero, Niloy J. Mitra, Daniel Ritchie
ACM Transactions on Graphics (Proceedings of SIGGRAPH), 2023

Neurosymbolic Models for Computer Graphics

Daniel Ritchie, Paul Guerrero, R. Kenny Jones, Niloy J. Mitra, Adriana Schulz, Karl D. D. Willis, Jiajun Wu
Eurographics State-of-the-Art Report, 2023

SHRED: 3D Shape Region Decomposition with Learned Local Operations

R. Kenny Jones, Aalia Habib, Daniel Ritchie
ACM Transactions on Graphics (Proceedings of SIGGRAPH Asia), 2022

PLAD: Learning to Infer Shape Programs with Pseudo-Labels and Approximate Distributions

R. Kenny Jones, Homer Walke, Daniel Ritchie
Computer Vision and Pattern Recognition (CVPR), 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
Computer Vision and Pattern Recognition (CVPR), 2022

ShapeMOD: Macro Operation Discovery for 3D Shape Programs

R. Kenny Jones, David Charatan, Paul Guerrero, Niloy J. Mitra, Daniel Ritchie
ACM Transactions on Graphics (Proceedings of SIGGRAPH), 2021

ShapeAssembly: Learning to Generate Programs for 3D Shape Structure Synthesis

R. Kenny Jones, Theresa Barton, Xianghao Xu, Kai Wang, Ellen Jiang, Paul Guerrero, Niloy J. Mitra, Daniel Ritchie
ACM Transactions on Graphics (Proceedings of SIGGRAPH Asia), 2020

PREPRINTS

Co-DSL: Human-LLM Co-design of Reusable Spatial Concepts for Layout Generation

R. Kenny Jones, Jiajun Wu, Maneesh Agrawala
arXiv preprint, 2026

Aggregating LLM-Based Weak Verifiers for Spatial Layout Generation

Sharon Zhang, R. Kenny Jones, Jiajun Wu, Maneesh Agrawala
arXiv preprint, 2026

BrickBench: Evaluating Agentic Brick Design

Peter Kulits, Yiqing Xu, R. Kenny Jones, Cordelia Schmid, Jiajun Wu
arXiv preprint, 2026

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 preprint, 2024

Learning Body-Aware 3D Shape Generative Models

Bryce Blinn, Alexander Ding, R. Kenny Jones, Manolis Savva, Srinath Sridhar, Daniel Ritchie
arXiv preprint, 2021

INVITED TALKS

Designing DSLs for 3D Shape and Scene Generation

Roblox, *3D Foundation Models team* July 2026
UMass Amherst, *Machine Learning and Friends Lunch* April 2026

Co-designing Programmatic Spatial Abstractions with LLMs

Stanford University, *Graphics Cafe* October 2025

Learning to Edit Visual Programs with Self-Supervision

New England Computer Vision Workshop November 2024

Neurosymbolic Methods for Shape Analysis and Generation

MIT, *Visual Computing Seminar* October 2024
Stanford University, *Vision Seminar* June 2024
Roblox, *Research Colloquium* April 2024
Columbia University, *Vondrick Lab* April 2024

Learning to Infer Generative Template Programs for Visual Concepts

New York Computer Vision Day April 2024

3D Shape Analysis with Region Decompositions

CVPR, *Structural and Compositional Learning on 3D Data Workshop* June 2023

Deep Learning and Generative Models

Brown University, *Guest Lecture in CSCI 1410* September 2020

ShapeAssembly: Learning to Generate Programs for 3D Shape Structure Synthesis

Brown University, *Robotics Group* June 2020

WORKSHOP ORGANIZATION	Workshop on Visual Concepts	June 2026
	R. Kenny Jones, Joy Hsu, Yunzhi Zhang, Niladri Shekhar Dutt, Shenhan Qian, Jiayuan Mao, Elliott Wu, Jiajun Wu CVPR 2026 Workshop	
	Workshop on Visual Concepts	June 2025
	Yunzhi Zhang, Joy Hsu, Jiayuan Mao, R. Kenny Jones, Himanshu Singh, Daniel Cohen-Or, Shangzhe Wu, Jiajun Wu CVPR 2025 Workshop	
PROFESSIONAL SERVICE	Area Chair	
	3DV: 2026, 2027	
	Eurographics Short Papers: 2026	
	Conference Reviewer	
	SIGGRAPH: 2022 – 2026 SIGGRAPH Asia: 2022 – 2026 CVPR: 2022 – 2026 NeurIPS: 2023 – 2025 ICCV: 2023, 2025 ECCV: 2022, 2024 ICML: 2025 ICLR: 2024 Eurographics: 2023, 2025 Pacific Graphics: 2025	
	Journal Reviewer	
	ACM Transactions on Graphics: 2023 – 2026 IEEE TVCG: 2024, 2025	
	Outreach	
	Co-organizer, Brown Visual Computing Seminar: 2021 – 2024 Mentor, Google exploreCSR, Brown University: 2021 – 2023 Mentor, SIGGRAPH RCDC graduate application program: 2021 – 2023	
RESEARCH MENTORING	Jeffrey Mu, Brown CS Undergrad	2025 – Present
	Yuqiao Guan, Brown CS Undergrad → <i>PhD @ Hong Kong Polytechnic University</i>	2025
	Junyu Liu, Brown CS ScM → <i>PhD @ EPFL</i>	2024 – 2025
	Jean Yoo, Brown CS Undergrad	2024 – 2025
	Vivian Lu, Brown CS Undergrad + ScM	2024 – 2025
	Renhao (Norman) Zhang, Brown CS ScM → <i>PhD @ UMass Amherst</i>	2023 – 2024
	Anh Truong, Brown CS Undergrad → <i>PhD @ MIT</i>	2022 – 2024
	Sarah Roberts, Brown CS Undergrad	2023
	Alana White, Brown CS Undergrad	2023
	Rio Aguina-Kang, Visiting Undergrad (UCSD)	2023
	Paul Biberstein, Brown CS Undergrad → <i>PhD @ UPenn</i>	2022 – 2023
	Klara Chura, Visiting Undergrad (Tufts) → <i>PhD @ Brown</i>	2022

	Aalia Habib, Brown CS Undergrad	2021 – 2022
	Bryce Blinn, Brown CS Undergrad + ScM → <i>PhD @ USC</i>	2020 – 2022
	Caleb Trotz, Brown CS Undergrad	2020 – 2022
	Homer Walke, Brown CS Undergrad → <i>PhD @ UC Berkeley</i>	2020 – 2022
	David Charatan, Brown CS Undergrad → <i>PhD @ MIT</i>	2020 – 2021
	Ellen Jiang, Brown CS Undergrad	2019 – 2020
	Brian Oppenheim, Brown CS Undergrad	2019 – 2020
TEACHING	Graduate Teaching Assistant Brown CSCI 2240: Advanced Computer Graphics	Spring 2023
	Undergraduate Teaching Assistant Williams CSCI 256: Algorithm Design and Analysis	Spring 2017
	Tutor Williams College Math and Science Resource Center	2014 – 2016
AWARDS & HONORS	NSF Graduate Research Fellowship, Honorable Mention	2021
	Brown University Presidential Fellowship	2019
	Ward Prize, Williams College CS (best student project)	2017
GRANTS	Brown Institute for Media Innovation Magic Grant (\$85,000) <i>Vibe Animating</i> Co-PI with Jiaju Ma	2026 – 2027
	NSF HCC Small #2519772 (\$477,651) <i>Open-vocabulary Neurosymbolic 3D Models</i> Co-wrote grant proposal with PI Daniel Ritchie	2025 – 2028