

# Resume

## Basic Information

Name: Xianghao XU (徐翔昊)

Date of Birth: April 3, 1989

Gender: Male

Nationality: China

Email: xuxianghao2016@outlook.com



## Experience

2019.09-Present **Brown University (Providence, USA)**



**Ph.D. student (Computer Science )**

My research is in the intersection of Computer Graphics and Machine learning.

2021.06-2021.09 **Adobe Research (CA, USA)**

**Graphics research Intern**



I'm leading a research project for learning to discover part structure of 3D shapes.

**2020.06-2020.08 Autodesk AI Research Lab (CA, USA)**

### **AI research Intern**

I lead a research project for learning to predict 3D shape reconstruction operations.



**2017.10-2019.06 Autodesk Research and Development Center (Shanghai, China)**

### **Senior Software Engineer (Graphics)**

I am working in the OGS (One Graphics System) team of Autodesk and responsible for researching, developing and optimizing the core rendering system (Graphics Engine) used by all products of Autodesk.



**2015.09-2017.04 Virtuos (Shanghai, China)**

### **Software Engineer (Graphics)**

I fully participated in the production of <Final Fantasy XII: The Zodiac Age> PS4 HD Remaster. I mainly focused on graphical improvement tasks including character rendering, scene rendering, shadow rendering, image post-processing, VFX porting and movie video & audio processing.



2014.09-2015.04 Disney Research Lab (Zurich, Switzerland)

## Master Thesis Student

I was in the animation group of Disney Research, my responsibility was to design and develop new algorithms. I created and implemented a new algorithm that allows complex interactions between 3D characters and 3D environments.



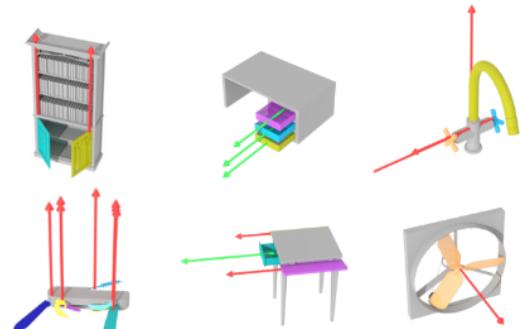
## Publications

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### Unsupervised Kinematic Motion Detection for Part-segmented 3D Shape Collections

Xianghao Xu, Yifan Ruan, Srinath Sridhar and Daniel Ritchie

SIGGRAPH 2022



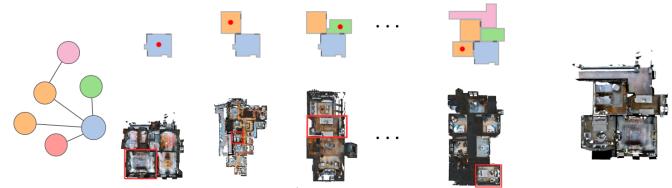
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http://www.csail.mit.edu/~xhxu/paper/SIGGRAPH2022.pdf

## 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, and Daniel Ritchie

SGP 2021

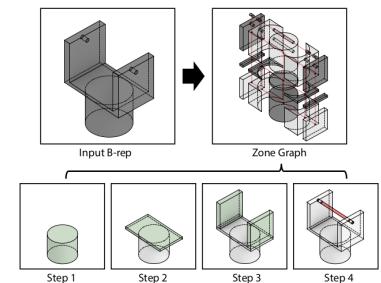


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## Inferring CAD Modeling Sequences Using Zone Graphs.

**Xianghao Xu**, Wenzhe Peng, Chin-Yi Cheng, Karl D.D. Willis and Daniel Ritchie

CVPR 2021

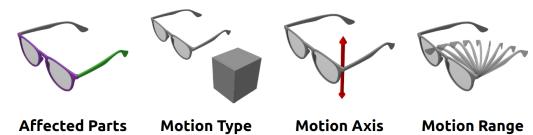


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## Motion Annotation Programs: A Scalable Approach to Annotating Kinematic Articulations in Large 3D Shape Collections.

**Xianghao Xu**, David Charatan, Sonia Raychaudhuri, Hanxiao Jiang, Mae Heitmann, Vladimir Kim, Siddhartha Chaudhuri, Manolis Savva, Angel X. Chang, and Daniel Ritchie

3DV 2020

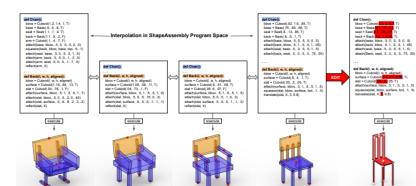


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## ShapeAssembly: Learning to Generate Programs for 3D Shape Structure Synthesis

R. Kenny Jones, Theresa Barton, **Xianghao Xu**, Kai Wang, Ellen Jiang, Paul Guerrero, Niloy Mitra, and Daniel Ritchie

SIGGRAPH Asia 2020



## **PRECISION: Precomputing Environment Semantics for Contact-Rich Character Animation**

Mubbasis Kapadia , **Xu Xianghao**, Maurizio Nitti, Marcelo Kallmann, Stelian Coros, Robert W. Sumner , Markus Gross

I3D 2016



## **Education**

**2019.09-Present Brown University (Providence, USA)**

**Ph.D. student (Computer Science )**



My research is in the intersection of Computer Graphics and Machine learning.

**2019.09-2021.05 Brown University (Providence, USA)**

**Computer Science (Master's Degree, Final grade: A)**



**2012.09-2015.05 Swiss Federal Institute of Technology  
Zurich -- ETH Zurich (Zurich, Switzerland)**

**Computer Science (Master's Degree, Final grade: 5.33/6.0)**



My graduation thesis was nominated as one of the candidates of the best thesis of the year (2015) of the computer science department.

**2009.09-2012.09 Polytechnic University of Turin --  
Politecnico di Torino (Turin, Italy)**



**Electronic and Computer Engineering (Bachelor's Degree, Final grade 106/110)**

I was admitted by the University with a Politecnico di Torino Full Scholarship. This Scholarship is the Excellence Scholarship (10000euro/year) that is awarded to only a very small portion of excellent students.

## **SERVICE**

**Conference Reviewer:**

SIGGRAPH Asia 2020



ICCV 2021 WorkShop

## **Skills**

Strong in Math and Algorithms

Familiar with Computer Graphics, Vision and Machine Learning related algorithms.

Strong programming skill in C/C++, Python, OpenGL/DirectX

## **Courses taken (Selected):**

Artificial Intelligence, Deep Learning, Machine Learning, Data mining, Computational Intelligence , Computer Vision, Computer Vision for Graphics and Interaction

Scientific Visualization, Computer Graphics, Image Synthesis(Advanced Rendering), Physical based Animation, Game Programing

Calculus, Linear Algebra, Probability and Statistics, Mathematical methods, Algorithms Analysis, Mechanics, Computer Programming, Advanced Programming, Computer Architectures, Operating System, Advanced Systems, Computer Networks, Control Theory, Electronics, Signal Theory, Electromagnetism

# Other Personal Projects(Selected)

## The Battle of the Seasons (Video game with fluid simulation, 2014)

Android platform video game. 2D fluid simulation. Java.

Our game had more than 1000 downloads on Google Play. Our game won the 1st place of the ETH 2014 game competition, nominated as one of the best game of 2014 Swiss game festival, nominated as one of the best Swiss software 2014, and elected as the representative ETH student project for India IIT exhibition.

Trailer: <https://www.youtube.com/watch?v=at6ctnEu5wl>



## East and West (Photo realistic ray-tracing rendering, 2013)

Ray Tracing, Global Illumination using Photon Mapping, Subsurface Scattering, Physically BRDF (Anisotropic Lighting and Micro Facet Theory). C++ and openGL.

My rendering project won 2nd place of ETH rendering competition 2013 (The Jury was formed of computer scientists and senior engineers from Pixar and Disney Research Zurich).

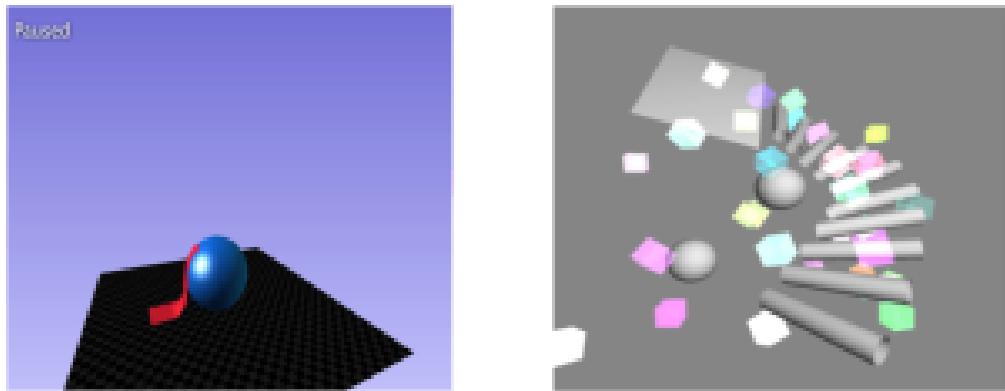
Link: <https://graphics.ethz.ch/teaching/imsynth13/competition/competition.php>



## Cloth and Jelly (Physically based animation simulation, 2013)

Soft body simulation, rigid body physics, mass spring system, implicit Euler function, cloth self-collision system. C++ and OpenGL.

Our project won the third place of ETH physical simulation competition (Jury was formed of professors from ETH computer science department).



## Image style transfer

Implementation of Paper “Fast Patch-based Style Transfer of Arbitrary Style”, Python

