

Resume

Basic Information

Name: Xianghao XU

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.

2020.06-2020.08 **Autodesk AI Research Lab (San Francisco, 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.

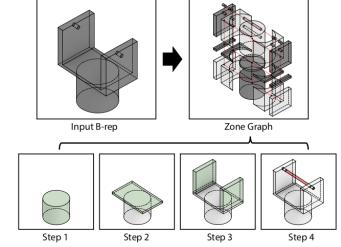


Publications

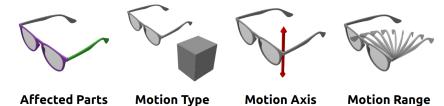
Inferring CAD Modeling Sequences Using Zone Graphs.

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

CVPR 2021



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



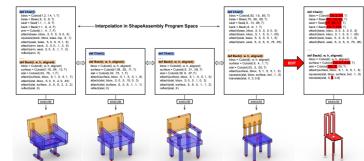
Xianghao Xu, David Charatan, Sonia Raychaudhuri, Hanxiao Jiang, Mae Heitmann, Vladimir Kim, Siddhartha Chaudhuri, Manolis Savva, Angel X. Chang, and Daniel Ritchie

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, 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.

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 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:

ACM SIGGRAPH Asia 2020



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 Programming

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).

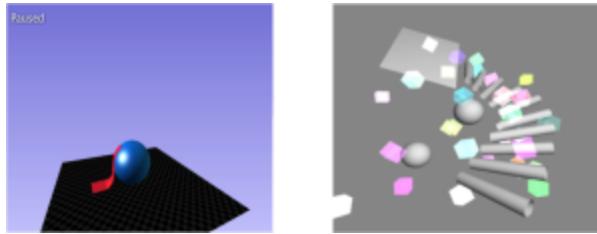
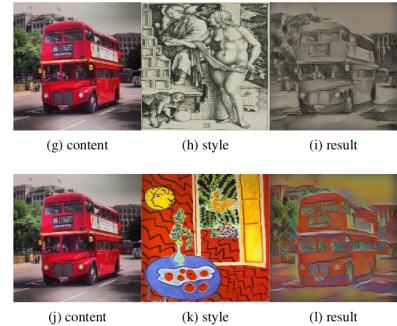
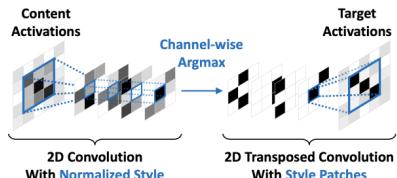


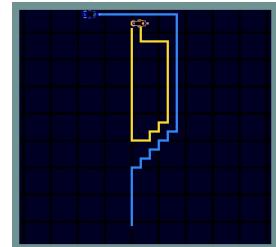
Image style transfer

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



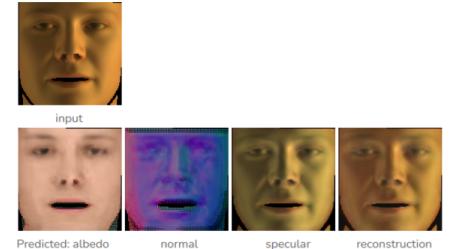
Tron Game AI Robot

Implementation of several reinforcement learning algos(Deep Q learning, Double Deep Q, Policy Gradient) and Monte Carlo Tree Search, Alpha-Beta Pruning, Python



Learning to decompose face lighting properties

A research project trying to decompose face lighting attributes(diffuse component, specular component etc) from a bunch of images, Python



Face generation using GAN

Implementation of Paper: “Unsupervised Representation Learning with Deep Convolutional Generative Adversarial Networks”, Python

