

Chrystiano Araújo

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Research Summary

My Ph.D. research centers on designing easy-to-use solutions to democratize the customization and creation of 3D and 2D content for end users. Throughout my Ph.D., I have developed novel geometry processing solutions to simplify these tasks, resulting in **five Siggraph publications**. My ongoing focus is on combining classical geometry processing with deep-learning techniques, leveraging increasingly available 3D data to allow for full and easy 3D content customization and creation for everyone.

Education

Ph.D., Computer Science

Fall 2017 - April 2024 (expected)

The University of British Columbia, Vancouver, BC, Canada

Advisor: Prof. Alla Sheffer

- 3D Shape Editing and Deformation, VR Drawing, Digital Fabrication

M.Sc., Computer Science

Mar 2010 - Sep 2012

Pontifical Catholic University of Rio de Janeiro (PUC-Rio), Rio de Janeiro, RJ, Brazil

Advisor: Prof. Waldemar Celes

- Quadrilateral Mesh Generation

B.Sc., Computer Science

Mar 2005 - Jul 2009

Candido Mendes University, Campos dos Goytacazes, RJ, Brazil

Advisor: Prof. Italo Matias

- Metaheuristics, Pattern Recognition for Virtual Autonomous Motion

Selected Publications

Slippage-Preserving Reshaping of Human-Made 3D Content

Chrystiano Araujo, Nicholas Vining, Silver Burla, Manuel Oliveira, Enrique Rosales, Alla Sheffer

ACM Transactions on Graphics (SIGGRAPH Asia), 2023 [[pdf](#)][[project page](#)]

As-Locally-Uniform-As-Possible Reshaping of Vector Clip-Art

Chrystiano Araujo, Nicholas Vining, Giorgio Gori, Alla Sheffer

ACM Transactions on Graphics (SIGGRAPH), 2022 [[pdf](#)][[project page](#)]

AdaptiBrush: Adaptive General And Predictable VR Ribbon Brush

Enrique Rosales, Chrystiano Araujo, Jafet Rodriguez, Nicholas Vining, Dongwook Yoon, Alla Sheffer

ACM Transactions on Graphics (SIGGRAPH Asia), 2021 [[pdf](#)][[project page](#)]

DHFSlicer: Double Height-Field Slicing For Milling Fixed-Height Materials

Jinfan Yang, Chrystiano Araujo, Nicholas Vining, Zachary Ferguson, Enrique Rosales, Daniele Panozzo, Sylvain Lefevbre, Paolo Cignoni, Alla Sheffer

ACM Transactions on Graphics (SIGGRAPH Asia), 2020 [[pdf](#)][[project page](#)]

Surface2Volume: Surface Segmentation Conforming Assemblable Volumetric Partition

Chrystiano Araujo*, Daniela Cabiddu*, Marco Attene, Marco Livesu, Nicholas Vining, Alla Sheffer

ACM Transactions on Graphics (SIGGRAPH), 2019 (*joint first authors) [[pdf](#)][[project page](#)]

Quadrilateral Mesh Generation With Deferred Constraint Insertion

Chrystiano Araujo, Waldemar Celes

International Meshing Roundtable (IMR 2014, London, UK), 2014 [[pdf](#)]

Research and Work Experience

Research Intern - ROBLOX Research

June 2023 - Sep 2023

Mentors: Dr. Hsueh-Ti Derek Liu, Prof. Victor Zordan, Prof. Maneesh Agrawala

- Worked on designing a deep-learning-based solution for Geometric Stylization of 3D content.

Research Intern - Adobe Research

May 2020 - Nov 2020

Mentors: Giorgio Gori, Prof. Alla Sheffer

- Developed a novel algorithm for shape editing [[project page](#)]

Research Assistant - Digital Geometry Processing Group, UBC

Sep 2017 - present

Advisor: Prof. Alla Sheffer

- Conducted research on several areas in the Geometry Processing research field, ranging from 2D/3D Shape Editing and Deformation, VR Drawing, to Digital Fabrication.

Research Engineer - Graphics Research Institute, Tecgraf

Oct 2012 - Jun 2017

Director: Prof. Waldemar Celes

- Worked on developing a 3D visualization software for rock reservoirs and flow simulation. Specifically responsible for implementing geometry processing algorithms (hexahedral and triangle meshes).
- Worked for several months developing a finite element method visualization software.
- Main technologies: C++, Lua, and OpenGL

Research Intern - Graphics Research Institute, Tecgraf

Mar 2010 - Sep 2012

Director: Prof. Eduardo Thadeu

- Worked on developing a 3D rendering engine for massive 3D CAD models.
- Main technologies: C++, Lua, OpenGL, GLSL, and QT

Invited Talks

User-Centered 3D Content Editing - ROBLOX Research (Feb 15, 2024)

Hosts: Dr. Hsueh-Ti Derek Liu and Prof. Victor Zordan

Teaching

Teaching Assistant - CPSC 436 Game Programming, University of British Columbia

2018

Teaching Assistant - CPSC 418 Parallel Computation, University of British Columbia

2017

Instructor - Several short courses on Python programming language, Image Processing, and Web Development during my undergraduate studies.

Skills

Programming: C++, Python, Lua, C#, Javascript, Erlang

Libraries and Tools: PyTorch, OpenGL, CUDA, libigl, CGAL, CMAKE, Git

Visual Editing and Creation: Blender, Illustrator, Photoshop, Premiere