

# JIAYI (ERIS) ZHANG

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## EDUCATION

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**University of Toronto** Sept. 2016 - June 2021 (Expected)  
Honours BSc in Computer Science & Mathematics Toronto, ON  
*Overall GPA: 3.96/4.0*

## RESEARCH INTERESTS

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I'm broadly interested in geometry processing, physics-based animation, computational design and fabrication, visualization and interface technologies that augment users' creativity and productivity.

## RESEARCH EXPERIENCE

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**Adobe Research** June 2020 - Present  
Research Intern at the Emerging Graphics Group with Dr. Qi Sun San Jose, CA (Remote)

- Working on a novel method for simulating skin microgeometry deformation

**DGP Lab, University of Toronto** Sept. 2019 - May 2020  
Research Assistant with Prof. David I.W. Levin and Prof. Alec Jacobson Toronto, ON

- Worked on a novel method for adding secondary physical motion to rig-based animation

**DGP Lab, University of Toronto** Mar. 2019 - July 2019  
Research Assistant with Prof. Marc Alexa and Prof. Alec Jacobson Toronto, ON

- Worked on a novel method for efficiently computing updates for least-squares rotational alignment problems and further optimized implementation using AVX vectorization

**DGP Lab, University of Toronto** Sept. 2018 - 2019  
Capstone Project with Prof. Alec Jacobson Toronto, ON

- Worked on a shape optimization method that slims down supporting structures of 3D printing and further extended it to an interactive structural prototyping tool

**DGP Lab, University of Toronto** Apr. 2018 - Sept. 2019  
Research Assistant with Prof. Fanny Chevalier Toronto, ON

- Worked on an image-editing-based user interface that facilitates pictorial visualization authoring

**Numerical Analysis Group, University of Toronto** 2018 - 2019  
Research Assistant with Prof. Kenneth R. Jackson Toronto, ON

- Worked on a two-level importance sampling algorithm in simulating financial portfolio credit risk

## HONOURS AND AWARDS

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**Adobe Research Women-in-Technology Scholarship** [Link](#) 2020  
Awarded to outstanding female undergraduate/master computer science students worldwide

**CRA Outstanding Undergraduate Researchers Award Finalist** [Link](#) 2020  
Awarded to top undergraduate computer science researchers in North America

University of Toronto Excellence Award UTEA	2019
Dean's Honour List	2017 - 2020
George Luste Prize in 1st Year Physics	2018
George Gray Falle Scholarship	2017
University of Toronto Scholar	2017
Admission Scholarship	2016

## PUBLICATIONS

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### Fast Updates for Least-Squares Rotational Alignment

Jiayi Eris Zhang, Alec Jacobson, Marc Alexa

- *Eurographics 2021 (Conditionally Accepted)*

### Complementary Dynamics

Jiayi Eris Zhang, Seungbae Bang, David I.W. Levin, Alec Jacobson

- *ACM Transactions on Graphics (Proc. SIGGRAPH Asia) 2020*

### DataQuilt: Extracting Visual Elements from Images to Craft Pictorial Visualizations

Jiayi Eris Zhang, Nicole Sultanum, Anastasia Bezerianos, Fanny Chevalier

- *ACM Conference on Human Factors in Computing Systems (CHI) 2020*

## INVITED TALKS

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### Complementary Dynamics

*Technical Paper Presentation at SIGGRAPH ASIA 2020*

December 2020  
Daegu, South Korea (Virtual)

### Complementary Dynamics

*Research Talk at the Pixar Animation Studios hosted by Dr. Fernando de Gose*

November 2020  
Virtual

### Complementary Dynamics

*Research Talk at the Massachusetts Institute of Technology Graphics Seminar*

November 2020  
Virtual

### Complementary Dynamics

*Research Talk at the Epic Games hosted by Dr. Ryan Schmidt*

November 2020  
Virtual

### Complementary Dynamics

*Research Talk at the Graphics And Mixed Environment Seminar at MSRA*

November 2020  
Virtual

### Complementary Dynamics

*Opener Talk for Dr. Danny Kaufman at the Toronto Geometry Colloquium*

November 2020  
Virtual

### UltraSkin: towards Infinite Resolution Skin Modeling

*Adobe Research Intern Intro Talk*

June 2020  
San Jose, US (Virtual)

### DataQuilt: Extracting Visual Elements to Craft Pictorial Visualizations

*Technical Paper Presentation at CHI 2020*

May 2020  
Honolulu, US (Virtual)

### Exterior Rig Space

*Research Talk at the Montreal-Toronto pre-SIGGRAPH Workshop*

December 2019  
Waterloo, Canada

### Expressive Design for Infographics Authoring

*Undergraduate Research in Computer Science Conference*

September 2018  
Toronto, Canada

## TEACHING EXPERIENCE

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**CSC419/2520 Geometry Processing**  
Teaching Assistant with Prof. Alec Jacobson

Fall 2020

## ACADEMIC SERVICE

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**Reviewer** Eurographics 2021

## SKILLS

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**Programming Languages:** Python, C/C++, Java, Matlab, Javascript, HTML, CSS  
**Tools/Frameworks:** React, D3.js, libigl, OpenGL, OpenCV, Pytorch, CUDA C, SIMD SSE/AVX  
**Softwares:** Blender, MeshLab, Photoshop, Illustrator  
**Languages:** English, Mandarin

## SELECTED COURSEWORK

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### Graduate Courses

- Physics-based Animation • Seminar on Geometry and Animation I & II
- Geometry Processing • Foundation of Computer Vision • Matrix Calculations

### Undergraduate Courses

- Computer Graphics • Intro to Visual Computing • Numerical Optimization
- Neural Networks • Operating Systems • Parallel Computing • Curves and Surfaces
- Numerical Methods • Computational Methods for Partial Differential Equations
- Advanced Ordinary Differential Equations

## VOLUNTEER EXPERIENCE

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HER CODE CAMP Panelist  
SIGGRAPH Student Volunteer in Los Angeles

2020  
2019