

# Sharon Zhang

## CONTACT

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## INTERESTS

Creative support tools, vector graphics, computational design, image synthesis, video editing, visual programming.

## EDUCATION

*2021 - Current* Stanford University  
PhD in Computer Science  
Advisor: Maneesh Agrawala

*2017 - 2021* Princeton University  
A.B. in Mathematics with honors · Minor in Computer Science  
Thesis: *Contextual Bias and Interpretability in Visual Classification*  
Advisor: Olga Russakovsky

## RESEARCH EXPERIENCE

*2020 - 2021* Visual AI Lab, *Princeton University*  
Advisor: Olga Russakovsky  
Investigated interpretability methods and contextual bias mitigation in visual classifiers.  
Team member for the Machine Learning Reproducibility Challenge.

*2020* Department of Mathematics, *Princeton University*  
Advisor: Amit Singer  
Worked on algorithms for product manifold learning.

*2019* SMALL REU, *Williams College*  
Advisor: Susan Loepf  
Undergraduate researcher in the 2019 Commutative Algebra cohort.

## INDUSTRY EXPERIENCE

*2021* Research Intern, *Google*  
Worked on layered video representations with the Visual Dynamics team. Hosted by Jonathan Huang and Vivek Rathod.

*2020* Software Engineering Intern, *Google*  
Hosted by the Android Camera Machine Intelligence team. Designed and implemented an open-sourced API for Android developers to incorporate Google motion photos.

## PUBLICATIONS

**Sharon Zhang**, Jiaju Ma, Jiajun Wu, Daniel Ritchie, Maneesh Agrawala. "Editing Motion Graphics Video via Motion Vectorization and Transformation." *SIGGRAPH Asia*, 2023.

Chen Geng\*, Hong-Xing Yu\*, **Sharon Zhang**, Maneesh Agrawala, Jiajun Wu. "Tree-Structured Shading Decomposition." *International Conference on Computer Vision (ICCV)*, 2023.

Sunnie S. Y. Kim, **Sharon Zhang**, Nicole Meister, Olga Russakovsky. "[Re] Don't Judge an Object By It's Context: Overcoming Contextual Bias." Machine Learning Reproducibility Challenge 2020. In *ReScience C Journal*.

**Sharon Zhang**, Amit Moscovich, Amit Singer. "Product Manifold Learning." *Artificial Intelligence and Statistics (AISTATS)*, 2021.

Erica Barrett\*, Emil Graf\*, Kimball Strong\*, **Sharon Zhang\***, S. Loepp. "Cardinalities of Prime Spectra of Precompletions." *AMS Contemporary Mathematics: "Commutative Algebra: 150 Years with Roger and Sylvia Wiegand."* **773** (2021), 133–152.

Erica Barrett\*, Emil Graf\*, Kimball Strong\*, **Sharon Zhang\***, S. Loepp. "Structure of spectra of precompletions." *Rocky Mountain J. Math.* **50** (2020), no. 6, 1965–1988.

## TALKS

**Sharon Zhang** and Emil Graf. 2019. "Prime Ideals of a Local Ring and Prime Ideals of Its Completion." MathFest 2019. 31 Jul 2019 – 3 Aug 2019. Cincinnati, OH, USA.

## AWARDS

2023 - 2026	NSF Graduate Research Fellowship
2023	Ford Foundation Fellowship Honorable Mention
2023	Paul & Daisy Soros Fellowship Finalist
2022	Brown Institute for Media Innovation Magic Grant
2021	Middleton Miller '29 Prize, <i>awarded for best independent work in mathematics</i>
2021	NSF Graduate Research Fellowship Honorable Mention

## COMPUTER SKILLS

<i>Languages</i>	Python, Java, HTML/CSS, C/C++, bash shell scripting
<i>Software &amp; Tools</i>	JAX, PyTorch, TensorFlow, Git, CVX, L <sup>A</sup> T <sub>E</sub> X, Google Cloud, Adobe Creative Suite

## ACTIVITIES

2023	Organizer, Stanford Graphics Café
2021	Reviewer, AISTATS
2020	Undergraduate TA, COS 429: Computer Vision
2019	Peer Tutor, MAT 215: Honors Analysis
2019	Peer Tutor, COS 126: Introduction to Computer Science

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