

# Yuting Yang

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Computer Scientist @ Adobe

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My research interests are in the intersection of computer graphics, computational photography and programming language. Specifically, My research is focused on using compiler techniques to help easy manipulation and fast prototyping for general computer graphics programs.

## TECHNICAL SKILLS

<b>Tools and Languages</b>	Halide, GLSL, Python, C/C++, SWIFT, Metal, CUDA, MATLAB
<b>Research Area</b>	Computer Graphics, Computational Photography, Programming Language

## EDUCATION

<b>Princeton University</b> <i>Ph.D. Student in Computer Science</i> , Advisor: Adam Finkelstein	<b>Sept 2018 — May 2023</b> Princeton, NJ
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- Research on differentiating discontinuous programs with application to shaders and audio synth programs.
- Research on applying the program trace to augment the input data for learning tasks in computer graphics.

<b>University of Virginia</b> <i>Enrolled in Ph.D Program, Computer Science</i> , Advisor: Connelly Barnes	<b>Aug 2015 — May 2018</b> Charlottesville, VA
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- Research on smoothing shader programs by approximating their convolution with Gaussian kernels.
- Research on translating python programs to optimized C for computer graphics tasks.

<b>University of Pennsylvania</b> <i>M.S., Electrical Engineering</i> , Advisor: Daniel D. Lee and Camillo J. Taylor	<b>Aug 2013 — May 2015</b> Philadelphia, PA
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<b>Huazhong University of Science and Technology</b> <i>B.S., Electronics and Information Engineering</i>	<b>Sept 2009 — June 2013</b> Wuhan, P.R.China
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## PROFESSIONAL WORK EXPERIENCE

<b>Adobe</b>	<b>Jul 2023 – current</b>
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*Computer Scientist*

Developing a camera app to help photographers take better-looking pictures on mobile phones.

<b>Adobe Research</b>	<b>May 2022 — Aug 2022</b>
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*Research Intern*

Worked with Connelly Barnes and Zeyu Jin to build a gradient-based optimization pipeline for musical synths by adapting inverse rendering gradient rules to audio.

<b>Adobe Research</b>	<b>Feb 2021 — Apr 2021</b>
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*Research Intern*

Worked with Connelly Barnes and Andrew Adams to develop math rules for differentiating discontinuous programs and reconstruct program representation for real-world icons to enable easy animation/manipulation in GLSL.

## PUBLICATIONS

- [1] **Yuting Yang**, Zeyu Jin, Connelly Barnes, Adam Finkelstein. White Box Search over Audio Synthesizer Parameters. **ISMIR 2023**
- [2] **Yuting Yang**, Connelly Barnes, Andrew Adams, Adam Finkelstein. A $\delta$ : Autodiff for Discontinuous Programs - Applied to Shaders. **SIGGRAPH 2022**
- [3] **Yuting Yang**, Connelly Barnes, Adam Finkelstein. Learning from Shader Program Traces. **Eurographics 2022**
- [4] Ethan Tseng, Felix Yu, **Yuting Yang**, Fahim Mannan, Karl St. Arnaud, Derek Nowrouzezahrai, Jean-François Lalonde, Felix Heide. Hyperparameter Optimization in Black-box Image Processing using Differentiable Proxies. **SIGGRAPH 2019**
- [5] **Yuting Yang**, Connelly Barnes. Approximate Program Smoothing Using Mean-Variance Statistics, with Application to Procedural Shader Bandlimiting. **Eurographics 2018**
- [6] **Yuting Yang**, Sam Prestwood, Connelly Barnes. VizGen: Accelerating Visual Computing Prototypes in Dynamic Languages. **SIGGRAPH Asia 2016**
- [7] **Yuting Yang**, Camillo J. Taylor, Daniel D. Lee. Intersection monitoring from video using 3D reconstruction. **ITS International January February 2016**

## SERVICE

Reviewer for: SIGGRAPH (2023), TPAMI (2021), SIGGRAPH Asia (2019, 2023), IEEE BMSB (2018), Pacific Graphics (2018).