

Yuting Yang

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Computer Scientist @ Adobe

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

TECHNICAL SKILLS

Tools and Languages	TensorFlow, PyTorch, CUDA, Halide, GLSL, Python, C/C++, MATLAB
Research Area	Computer Graphics, Computer Vision, Machine Learning, Deep Learning, Programming Language

EDUCATION

Princeton University <i>Ph.D. Student in Computer Science</i> , Advisor: Adam Finkelstein	Sept 2018 — May 2023 Princeton, NJ
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- Research on automatic differentiation to discontinuous programs with application to shaders.
- Research on augmenting deep learning input data with program trace.
- Collaborate on using neural proxies to approximate and optimize black box programs/filters.

University of Virginia <i>Enrolled in Ph.D Program, Computer Science</i> , Advisor: Connelly Barnes	Aug 2015 — May 2018 Charlottesville, VA
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- Research on automatic convolution to shader programs using mean-variance statistic.
- Research on automatic program translation from python to optimized C for vision and graphics programs.

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

PROFESSIONAL WORK EXPERIENCE

Adobe <i>Computer Scientist</i> Developing next-gen camera app for mobile devices.	Jul 2023 – current
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Adobe Research <i>Research Intern</i> 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.	May 2022 — Aug 2022
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Adobe Research <i>Research Intern</i> 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.	Feb 2021 — Apr 2021
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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 δ : Autodiff for Discontinuous Programs - Applied to Shaders. **SIGGRAPH 2022**
- [3] **Yuting Yang**, Connelly Barnes, Adam Finkelstein. Learning from Shader Program Traces. **Eurographics 2022 (Best Paper Award)**
- [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).