Xuanda Yang

38 Zheda Rd, Hangzhou, China| +86 15974169470 | GitHub: TH3CHARLie | xuandayang@gmail.com

EDUCATION

Zhejiang University
B.Eng. in Computer Science and Technology — Sep. 2016 – Jun. 2020

- Cumulative GPA: 3.82 / 4.0, Major GPA: 3.90 / 4.0

EXPERIENCE

UCSB Center of Interactive and Visual Computing, UCSB — Jun. 2020 – Present
Research Assistant (Remote), advised by Prof. Lingqi Yan

- Implemented classic rendering algorithms including path tracing, bidirectional path tracing and bidirectional path tracing with probabilistic path connections
- Designed and implemented a new path tracing algorithm based on probabilistic path connection techniques and conducted qualitative and quantitative comparisons with existing rendering algorithms
- Working on a new variance reduction method in rendering by leveraging control variants

Zhejiang University & Massachusetts Institute of Technology — Dec. 2020 – Present
Research Assistant (Remote), collaborated with Yuanming Hu

- Designed and Implemented QuanTaichi, a new type system for Taichi, a productive programming language for high-performance Computer Graphics applications
- Provided a new quantization system enabling high performance quantization applications across platforms
- Significantly reduced memory consumption of typical physical simulation applications

State Key Lab of CAD & CG, Zhejiang University — Aug. 2018 – Jun 2020
Research Assistant, advised by Prof. Hongzhi Wu

- Designed and built a structured light 3D scanning system based on phase shifting, leveraging learning-based approaches to generate optimized patterns for better acquisition
- Designed and built a handheld mobile appearance acquisition prototype, making it possible for amateur users to capture high-quality object appearance at hand
- Designed and built a novel acquisition method that produces high-quality material and geometry information using optimal costs.

Google Summer of Code, Google — May. 2020 – Sept 2020
Student Developer (Remote), advised by Jukka Lehtosalo and Michael J. Sullivan

- Designed and implemented a low-level IR for mypyc, a high-performance compiler for typed Python
- Significantly improved mypyc's performance on various performance-critical operations
- Made the new experimental x86 assembly backend from impossible to practical

Supercomputing Team, Zhejiang University — Jul. 2017 – Jan 2020
Team Member, advised by Prof. Jianhai Chen

- Maintain a small-scale mixed heterogeneous high-performance computing cluster of 14 nodes
- Organized weekly paper reading sessions and training to prepare for attending annual competitions
- Tuned and optimized the task by improving its performance by 8x-20x and helped the team to win a first-prize in Asia Supercomputer Community 18 Student Supercomputer Challenge

TEACHING

Integrate Practice for Courses, Zhejiang University
Teaching Assistant, lectured by Prof. Jianhai Chen — Jul. 2018 – Aug 2018

GAMES 201: Advanced Physics Engines 2020: A Hands-on Tutorial
Teaching Assistant, lectured by Yuanming Hu — May. 2020 – Aug 2020

SELECTED PROJECTS

Automatic Video Object Cutout System May. 2019 - Jun. 2019

- Designed a system to automatically segment interesting foreground regions from continuous frames of videos
- Implemented iterative post-processing and mixture-based discriminative model to improve details
- Implemented a user-friendly GUI with QT, enabling interactive user refinement to correct small errors

Deep High Dynamic Range System for Dynamic Scenes Oct. 2019 - Nov. 2019

- Implemented a system from SIGGRAPH 2017 paper to generate high quality HDR images of dynamic scene
- Conducted quantitative and qualitative analysis on impacts of different flow methods as initial alignment
- Proposed a modified network architecture to generate less artifact and more visual pleasant results

PUBLICATIONS

Anonymous Submission @ TVCG under review

- A novel material and geometry acquisition method

SELECTED AWARDS AND HONORS

- Outstanding undergraduate thesis award of Zhejiang University (1%) 2020
- Zhejiang Daily & Alibaba Scholarship (3%) 2019
- Zhejiang Provincial Government Scholarship (5%) 2018
- Scholarship for Outstanding Merits of Zhejiang University 2018, 2019
- Scholarship for Academic Excellence of Zhejiang University 2018, 2019
- First Prize of ASC18 Student Supercomputer Challenge 2018

MISCS

- **Programming Languages:** C/C++, Python, MATLAB, Java, Shell, Verilog
- **Frameworks and Tools**: PBRT, OpenCV, TensorFlow, CUDA, OpenGL, OpenMP, MPI
- **Languages**: Chinese (Native), English (Fluent: TOEFL-107(S:23), GRE-326(V:157))
- **Open-Source Contribution**: mypy, taichi