ZHIPEI YAN

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EDUCATION

Texas A&M University *August 2015 - December 2020(expected)*
Ph.D. student in Computer Science. GPA: 3.84/4.0
Research areas: Computer Graphics, Geometric Modeling, Geometric Optimization, etc
Advisor: Dr. Scott Schaefer

University of Science and Technology of China *July 2011 - June 2015*
Hons. B.Sc. in Mathematics, School of the Gifted Young(SCGY). GPA: 3.82/4.3
Thesis: Research on Spatial Wireframe Decomposition for 3D Printing
Advisor: Dr. Ligang Liu, Dr. Shizhe Zhou

RESEARCH EXPERIENCE

Research Assistant, TAMU *August 2015 - Present*

Working with Dr. Scott Schaefer on several fundamental problems in computer graphics including spline curves, barycentric coordinates, parametrization, mesh processing, geometric optimization, and etc.

R&D Intern, ByteDance Inc. *June 2020 - September 2020*

Worked with the Computer Vision & Graphics group in ByteDance on a mesh editing tool. We developed an anchor points controlled physical based mesh deformation effect, which allowed users to design their 3D shapes from scratch, or adjust 3D models locally. The effect uses parallel computing on mesh vertices and can run in real time for large meshes on mobile devices using iOS/Android.

Research Intern, Adobe Research *May 2017 - August 2017*

Worked with the graphics group in Adobe Research on the curve editing tool "Curvature Tool" in Adobe Illustrator and Photoshop. Built the fundamental theory of "κ-Curves" and extended the curve tool to higher degrees. Compared to the classic "Pen Tool", the new drawing tool is easier to manipulate and more popular on mobile devices.

R&D Intern, Hefei Abaci Science & Technology Co. Ltd *July 2014 - August 2014*

Worked on a 3D reconstruction software using depth cameras. Improved Kinect Fusion's algorithm to scan human's head to get a closed mesh without holes. Developed a 3D portrait software and integrated the software into a 3D printing system so that users can scan and reproduce 3D objects.

PUBLICATIONS

Jin L., Yan Z., Zuo L. and Stoleru R., "NanoCommunication-based Flow Path Mapping for NanoSensors in Underground Oil Reservoirs." *ACM International Conference on Nanoscale Computing and Communication*, (2020)

Jin L., Zuo L., Yan Z. and Stoleru R., "NanoCommunication-based Impermeable Region Mapping for Oil Reservoir Exploration." *ACM International Conference on Nanoscale Computing and Communication*, (2019)

Yan Z. and Schaefer S., "A Family of Barycentric Coordinates for Co-Dimension 1 Manifolds with Simplicial Facets." *Computer Graphics Forum* (Proceedings of the Symposium on Geometry Processing), Vol. 38, No. 5 (2019), pp. 075-083

Yan Z., Schiller S. and Schaefer S., "Circle reproduction with Interpolatory Curves at Local Maximal Curvature Points." *Computer Aided Geometric Design*, Vol. 72, No. 6 (2019), pages 98-110

Yan Z., Schiller S., Wilensky G., Carr N., and Schaefer S., "κ-Curves: Interpolation at Local Maximum Curvature." *ACM Transactions on Graphics* (Proceedings of SIGGRAPH), Vol. 36, No. 4, (2017), pp. 129:1-129:7

PATENTS

U.S. 2019/0164318 A1: "Continuous-curvature rational curves for drawing applications", May 30, 2019

HONORS AND AWARDS

2019.7 Best Paper Award of Symposium on Geometry Processing (SGP) 2019
2015.6 Honorary rank of University of Science and Technology of China, top 2% students
2015.5 Excellent Bachelor Thesis of University of Science and Technology of China
2013.6 National Undergraduate Mathematical Contest of China, Anhui Division: 1st Grade
2012.5 12th RoboGame of USTC: 3rd Place

SKILLS

- C/C++/Wolfram Mathematica/Matlab/Python/OpenGL/CUDA/GPU/Mobile Development
- Geometric Modeling/Mesh Processing/Visualization/Rendering/3D Reconstruction
- Spline Curves and Surfaces/Discrete Differential Geometry/Numerical Optimization

ACADEMIC ACTIVITIES

2017-2020 Reviewer of conferences and journals of Siggraph, TOG, CAD, TVCG, AMC, CAGD.
2017.07 Presentation on ACM Siggraph 2017, Los Angeles, CA, USA
2016.03 Student Volunteer at Geometric Modeling and Processing, San Antonio, TX, USA