Yue Li

Email : yueli.cg@gmail.com
Webpage: https://liyuesolo.github.io/

Education

- **University of Pennsylvania** — Philadelphia, PA
  Master of Science in Engineering in Computer Graphics and Game Technology — *Aug. 2018 - Dec. 2019*
- **Beijing University of Technology** — Beijing, China
  Bachelor of Engineering in Software Engineering; GPA: 3.8 (Ranking 1/62) — *Sep. 2014 – Jun. 2018*

Publications

Li,Y., Jiang, C. Master Thesis: Hybrid Eulerian-Lagrangian Topology Optimization

Li,Y., Ma, L., Fan, H., & Mitchell, K. (2018). Feature-preserving detailed 3d face reconstruction from a single image. In *Proceedings of the 15th acm siggraph european conference on visual media production* (1:11:9). London, United Kingdom: ACM **(Best Paper Award)**

Li,Y., Wiedemann, P., & Mitchell, K. (2019). Deep Precomputed Radiance Transfer for Deformable Objects. *Proceedings of the ACM on Computer Graphics and Interactive Techniques*, 2(1), 1-16. https://doi.org/10.1145/3320284

Tang, Y., Han, X., **Li,Y**., Ma, L., & Tong, R. (2019b). Expressive facial style transfer forpersonalized memes mimic. *The Visual Computer*, 113

Research Experience

- **Max Planck Institute for Informatics** — Saarbruecken, Germany
  Visiting Scholar, Advisor: Prof. Christian Theobalt and Dr. Thabo Beeler — *Mar. 2020 - Aug. 2020*
  - **TBD**: Aiming to substitute current deep learning model with optimization methods.
- **University of Pennsylvania** — Philadelphia, PA
  Research Assistant, Advisor: Prof. Chenfanfu Jiang — *Jan. 2019 - present*
  - **Topology Optimization**: Using Hybrid Lagrangian-Eulerian method to address classic topology optimization problem. Implemented *Doing Topology Optimization Explicitly and Geometrically A New Moving Morphable Components Based Framework.*
- **Disney Research** — Glendale, CA
  Research Intern, Advisor: Prof. Kenny Mitchell — *May. 2019 - Aug. 2019*
  - **Accerlate probe images rendering with deep learning**: Probe images rendering, customized neural network architecture design
  - **Real time face reconstruction on mobile devices**: Precomputation, Block-Jacobi approximation
- **Edinburgh Napier University**
  Research Intern, Advisor: Prof. Kenny Mitchell — *Jun. 2018 - Sep. 2018*
  - **Rendering and Deep Learning** : Using deep learning techniques, convolution neural network, to account for deformable objects with global illumination for Precomputed Radiance Transfer with a significant amount of storage saving. Related work has been accepted to PACM CGIT.
- **Megvii Inc.(Face++)** — Beijing, China
  Research Intern, Leader: Dr. Liqian Ma, Mr. Haoqiang Fan — *Jul. 2017 - May 2018*
  - **Real-time 3D Detailed Face Reconstruction with Neural Network**: Using fully convolutional neural network to achieve 3D face reconstruction from a single RGB image real-time on PC with CPU or GPU. Smaller model is able to run on mobile devices in real time.
  - **Optimization-based 3D Detailed Face Reconstruction from a Single Image**: Optimization-based 3D face reconstruction from a single RGB image with details. The system is robust under various illuminations, large poses and expressions. A paper regarding this work has been accepted by CVMP2018 and awarded the Best Paper Award.
  - **3D Animoji Avatar**: Implemented *Deformation Transfer for Triangle Meshes* to transfer expression basis from Face Warehouse data to our customized 3D avatars.

- **Asian Morphable Model**: Constructed an Asian morphable model from scanned data. Implemented two Siggraph papers in registration and deformation with improvements added. Reproduced *Example-Based Facial Rigging* to generate expressions for each scanned individuals and utilized PCA to compute 46 muscle-based expression basis and an average face. Implemented *Guided Normal Mesh Filtering* for denoising. In charge of all related data examination, cleaning and deformation processes for our scanned data.
- **3D Landmark Annotation Tool**: Developed an easy-to-use, fast and robust 3D landmark annotation tool using OpenGL for 3D scanned mesh data and a related patent have been submitted to our intellectual property department.

- **Tsinghua University** Beijing, China
  Research Assistant *Nov. 2016 - Apr. 2017*
  - **Laplacian Deformation:**: Implemented *Laplacian Surface Editing* to registrate 3D scanned face to a template mesh.
  - **PolyCube Deformation:**: Solving optimization-based Poisson system for mesh deformation using face normal as soft constraints. Segmenting PolyCube models, extracting featured edges and vertices and rendering results utilizing Mitsuba.

Course Project

- **CIS563 Physics-based Animation** Implementation of explicit and implicit material point method for snow simulation from scratch. (Fall 2018)
- **CIS561 Advanced Rendering** Implementation of path tracing, bidirectional path tracing, photon mapping, volumetric rendering and motion blur. (Spring 2019)
- **CIS660 Advanced Topics in Computer Graphics** Implementation of *Drucker-Prager Elastoplasticity for Sand Animation* as a Houdini plugin. (Spring 2019)

Teaching Experience

- **CIS563 Physics-based Animation** Fall 2019 Teaching Assistant

Programming Skills

- **Languages**: C++, Python, Julia, Matlab **Libraries**: Ipopt, Eigen, OpenMesh, Libigl, Keras, CGAL, Optix
  Softwares: Houdini, Maya, Meshlab, Mitsuba