HANJIE (HOLLIS) LIU

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EDUCATION

Clemson University, Clemson, SC   August 2018 - present
Ph.D., Computer Science   M.S. expected 2020, Ph.D. expected 2023
- Research Interests: Computer Graphics, Physically Based Simulation, Photogrammetry
- Demo Reel: vimeo.com/316473958 and hollisliu.com

Drexel University, Philadelphia, PA   Graduated: June 2018
B.S., Computer Science, Minor Mathematics   GPA 3.36/4.00
- Honors Student, Undergraduate Outstanding Research Award in Computer Science

RESEARCH & PROFESSIONAL EXPERIENCE

Clemson University   Clemson, SC
Research Assistant, advised by Dr. Jerry Tessendorf   May 2019 - present
- Implementing space carving techniques to capture 3D volume through series of 2D images and camera intrinsics
- Using ray marching to re-render captured volumetric data

Graduate Teaching Assistant: Host lab sessions and write automated grading scripts   August 2018 - present

Drexel University   Philadelphia, PA
Research Assistant, PFI:AIR (NSF Award #1640366) **a 3D Model Matching Project (C++)** July 2017 - May 2018
- Designed a mesh alignment technique using graph theory along with a duplicate-removing mesh import algorithm
- Developed conversion algorithms between open polygonal meshes and watertight level set models using openVDB
- Developing an iOS app that converts a captured depth photo of an object into a 3D mesh for shape matching
- Wrote a Mac app for calling RESTful APIs, automated model similarity score testing and reporting (Swift)

Research Assistant, **an Eye Tracking Project, an Image Analysis Project**   March 2016 - September 2017
- Built a complete eye tracking solution from scratch that integrates with Aperio pathology software
- Architected a two machine setup using TCP sockets aiming to reduce distraction for subjects
- Developed a visual stimuli generator for testing human visual search capabilities (Python)
- Developed slide image segmentation algorithm to help diagnosing prostate cancer (Python)

SAP America   Newtown Square, PA
QA Engineer/ Developer   March 2015 - September 2015
- Efficiently tested new SAP internal software and system releases, including the global rollout of Windows 10
- Wrote comprehensive test cases based on the demand from upper management
- Led a 6-person development project building an inventory monitoring site with ASP.NET and SQL Server

SKILLS & COURSEWORK

C++, Python, Swift, iOS Dev, Web, LaTeX   Physically Based Animation, Virtual Reality Systems
OpenGL, Shaders, SceneKit, Unity, OpenVDB   Parallel/GPU Programming, Machine Learning

PROJECTS   **Github: hollisliu**

ARKit Facial Expression Capturing (Individual Final Project)   April 2019
- Wrote an iOS ARKit app to capture and save facial expression raw mesh data (Swift)
- Built a mesh processing pipeline with Python and Blender to recreate facial animation in Unity

Spacetime Rhapsody, Swift Playground & iOS App (on Github, Individual Project)   April 2017
- An interactive 3D app that helps users understand the effect of gravity outlined by Einstein's General Relativity
- Utilizes touch controls, SceneKit graphics and physics engine to render an intuitive interactive space model

Spread, an iOS App (Individual Project)   April 2016
- A productivity app that makes to-do list on iPhone as efficient as using sticky notes
- Leverages various Cocoa Touch APIs and Swift language features

iOS Vision Text Detection Demo (on Github with 110 stars, Individual Project)   June 2017
- A sample app showcasing the text detection feature in iOS Vision framework
- Takes live video feed and draws boxes around text detected in real time

AWARDS & ACTIVITIES

Apple WWDC Student Scholarship Recipient - May 2016
Vice Chair, Math and Computer Science Society (ACM chapter at Drexel), 2014 - 2016
First Violin, First Chair, Clemson University Symphony Orchestra, Clemson University String Quartet