

Shiyang JIA

Phone: (+86) 13262282871 | E-mail: sher_locked@sjtu.edu.cn | [Homepage](#)

EDUCATION

SHANGHAI JIAO TONG UNIVERSITY (SJTU), Shanghai

Sept. 2016 – Jul. 2020

- Undergraduate, Dept. of Computer Science
- Zhiyuan Honors Program of Engineering (an elite program for top 5% students)

GPA: Major 93.2 / Overall 87.5

Relevant Coursework: Linear Algebra (97), Probability and Statistics (97), Thinking and Approach of Programming (99, 1st), Mathematical Foundations of Computer Science (95), Computer Graphics (91), Data Visualization and Visual Analysis (97, 1st), Virtual Reality and Augmented Display (93)

INTERNSHIP

Research Intern, Microsoft Research Asia (MSRA), Beijing

Oct. 2019 – now

Mentor: Researcher Tiantian Liu (Internet Graphics Group)

- Integrated Position-based Dynamics into extant hair simulator and developed different interaction handling algorithm for different dynamics
 - Plan to train neural network as integrator taking outputs of simulator as ground truth to predict hair states of next frame
-

SELECTED PROJECTS

Hair Simulation with Discrete Elastic Rods

Jul. 2019 – Sep. 2019

Advisor: Associate Professor Bin Sheng (Dept. of Computer Science, SJTU)

Description: We simulated the motion of human hair based on the Discrete Elastic Rods model, developing a simulation tool that would present effects based on different inputted hair parameters.

- Conducted comprehensive literature review and implemented best simulation practices into the model in C++
 - Solved implicit-Euler integration using methods such as Preconditioning Conjugate Gradient and Cholesky decomposition, and evaluated results with factors such as run time
-

Hair Reconstruction from Single Image

Oct 2018 – Dec 2018

Advisor: Associate Professor Bin Sheng (Dept. of Computer Science, SJTU)

Description: We explored recent research on hair reconstruction and implemented an innovative deep learning system to perform the task.

- Constructed a dataset containing 6000 3D hair models with corresponding 2D orientation map
 - Built and trained an hourglass neural network, inputting orientation maps to predict 3D hair model with unique discrete positions and curvatures
-

New Scene Text Video Dataset with Navigation Information

Jun 2018 – Aug 2018

Advisor: Assistant Professor Danping Zou (Shanghai Key Lab of Navigation & Location-based Services, SJTU)

Description: We captured micro UAV-mounted GoPro video to establish a scene text dataset using a self-developed annotation tool.

- Developed scene text annotation tool LabelText with friendly user interface and various pre-defined interactions
 - Enhanced annotation efficiency with new bounding box tracking function between frames, reducing average annotation time per picture from 79s to 24s
-

Path Detection and Tracking by Micro UAV

Sep 2017 – Nov 2017

Advisors: Associate Professor Wensheng Yu and Junqi Wu (School of Aeronautics and Astronautics, SJTU)

Description: We explored automatic path detection and movement adjustment of Parrot AR.Drone using ROS communication and basic image processing methods.

- Achieved keyboard control of AR.Drone by binding keyboard event to message publication on specific ROS topic
 - Designed algorithm to detect the central line of the path and periodically adjust the moving direction of AR.Drone
 - Implemented path tracking for AR.Drone with slight jitters and little regular deviation
-

SKILLS

Programming: C++/C/C#, Python, JavaScript, MATLAB, LaTeX

Libraries: OpenGL, TensorFlow, OpenCV, Three.js **Others:** MySQL, ROS
