Shanhe (William) Wang

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EDUCATION

M.S., Robotics	Northwestern University, Evanston IL	GPA 3.87	Dec 2018
B.S., Mechanical Engineering	University of California Berkeley, Berkeley CA	GPA 3.57	May 2014

SKILLS

- Proficient in Python, C/C++, MATLAB, Mathematica, Git, LaTeX and Linux
- Experienced working with ROS, microcontrollers, Solidworks, AutoCAD, Altium Designer, LabView
- Kownledgeable in Visual Servoing, Kinematics, Computer Vision, Mechatronics, SLAM, Dynamics, Feedback Control System

PROJECTS

Camera Angle Calibration Apr 2018 - Jun 2018

Collaborative Project with Intelligent Flying Machines *Northwestern University*

- Programmed calibration software for UR3 robot in ROS and native environment
- Developed and refined proprietary camera calibration pipline to enhance usability and calibration accuracy
- Optimize image processing to locate camera rotaional center at subpixel accuracy
- Packaged calibration software tool in ROS and documented usage of ROS package

Sawyer's Travels Sep 2017 - Dec 2017

ROS Course Project *Northwestern University*

- Initiated team project using Sawyer robot to solve labyrinth with vision feedback
- Brainstormed and developed path planning algorithm with teammate
- Programmed software for Sawyer utilizing Intera SDK from Rethink Robotics
- Integrated programs into ROS software package
- Tunned PID controller for Sawyer's joint control

WORK EXPERIENCE

Hardware Engineer Jul 2014 - Jul 2017

University of Southern California Institute for Creative Technologies *Los Angeles, CA*

- Developed xCapture, a scalable and network-based camera control software system that can control a large number of machine vision cameras. The system provides a live view, acquires raw image data, processes raw image data and plays back image data from cameras in the system.
- Researched and prototyped the virtual head-mounted camera(VHC), a facial performance tracking system utilizing a pair of motorized pan/tilt mirrors and machine vision camera
- Developed and programmed motor controller for VHC to reach high precision control $\pm 0.009°$
- Reverse engineered auto-zoom and focus motors for camera lenses used on VHC
- Published VHC research project in SIGGRAPH 2015 poster session
- Engineered and prototyped apparatuses for research projects
- Programmed software for Microchip PIC microcontrollers integrated in lab equipments and research projects
- Advised and trained hardware interns

PUBLICATION

LeGendre C., Hyunh, L., **Wang, S.**, and Debevec, P., "Modeling Vellus Facial Hair from Asperity Scattering Silhouettes" in ACM SIGGRAPH 2017 Talks, *ACM SIGGRAPH*, Jul 2017

X. Yu, **S. Wang**, J. Busch, T. Phan, T. McSheery, M. Bolas, P. Debevec, "Virtual Headcam: Pan/tilt Mirror-based Facial Performance Tracking" in ACM SIGGRAPH 2015 Posters, *ACM SIGGRAPH*, Jul 2015