William Wang

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EDUCATION

Northwestern University, Evanston, Illinois
- M.S. in Robotics   Sep 2018 Expected

University of California Berkeley, Berkeley, California
- B.S. in Mechanical Engineering   May 2014

EXPERIENCE

USC Institute for Creative Technologies, Los Angeles, California
- Hardware Engineer   Jul 2014 – 201707

- Light Stage X 3.2 Project
  - Modified LSX3 PCB board design to achieve 12bit resolution control of all LEDs on board for multispectral relighting purpose
  - Designed floor lighting elements for 8 meter diameter lighting reproduction Light Stage
  - Sourced parts for and coordinated 1200 LSX3.2 PCB boards manufacturing order

- Computational Camera Project
  - Built a heterogeneous camera rig for multi-view performance capture
  - Developed xCapture, a scalable and network based camera control software system that can control large number of machine vision cameras. The system provides live view, acquire raw image data, process raw image data and play back data of all cameras attached to the system.
  - Designed and prototyped camera with interchangeable sensors, memory, and processors
  - Integrate new camera devices with Light Stage X and Light Stage 6
  - Designed and prototyped a camera "backpack" unit to provide image storage and image processing algorithms for existing machine vision cameras
  - Researched 2 single board computers (system on chip) including Banana Pi, Nvidia Jetson platforms for high throughput data acquisition and on-board image processing applications
  - Researched 2 computer vision cameras include Point Grey Flea3 FL3-GE-50S5C and Ximea MQ042MG-CM, and tested their compatibility with single board computers

- Specular Object Scanner Project
  - Upgraded light source of the system
  - Programmed Microchip dsPIC33e microcontrollers to control 610 LEDs individually
  - Regulated PWM cycles to achieve correct lighting intensity
  - Synchronized all LEDs to project lighting pattern

- Virtual Head-Mounted Camera Project
  - Published VHC project poster on ACM SIGGRAPH 2015
  - Engineered VHC system hardware and software for capturing facial expressions
  - Designed control circuit of VHC system
  - Configured VHC system to redirect light to camera lens with motorized mirrors
  - Programmed Microchip dsPIC33e microcontrollers to control BLDC motors
  - Controlled BLDC motor to reach ±0.009° precision
  - Implemented auto zoom and focus on camera lens for capturing detail facial expression
  - Integrated PhaseSpace motion capture system to VHC to achieve accurate object tracking

Shenzhen Terca Technology Co., Ltd., Shenzhen, China
- Engineering Intern   May 2013 – Jul 2013

- Joined R&D team and worked on hydrodynamic retarder project
- Tested and controlled hydrodynamic retarder and collected data in the laboratory
- Diagnosed oil leak problem of prototype retarder
- Presented prototype retarder to potential customers with project members

PUBLICATIONS   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.

SKILLS
- Programming Language: C/C++, Python, MATLAB, Java
- Software: Altium Designer, Adobe Illustrator, Solidworks, AutoCAD, LabView
- Others: Linux, ROS, Microcontroller, Prototyping, Machining, LaTeX

TECHNICAL COURSES   Dynamics, Optimization, Robot Manipulation, Dynamic System and Feedback, Mechatronics, Solid Mechanics, Finite Element Method, Engineering Material, Material and Manufacturing Processes, Heat Transfer, Energy Conversion Principles

LANGUAGES
- English: Professional working proficiency.
- Mandarin Chinese: Native proficiency.
- Cantonese: Native proficiency.