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Zhuohe (Harry) Liu

EDUCATION

Rice University, Houston, Texas, USA — Sep. 2016– May 2022 (expected)
- Ph.D. Student in Electrical & Computer Engineering (Neural Engineering)

Shanghai Jiao Tong University (SJTU), Shanghai, China — Sep. 2012 – Aug. 2016
- B. S. E. in Electrical & Computer Engineering, UM-SJTU Joint Institute (JI) (GPA: 3.63/4)
- Dean's List (3x), SJTU Excellent Student Scholarship (Level C) (2012, 2013)

University of Michigan (UM), Ann Arbor, Michigan, USA — Sep. 2014 – Apr. 2016
- B. S. E. in Biomedical Engineering (Bioelectrical Concentration), College of Engineering (GPA: 3.99/4)
- James B. Angell Scholar (2016), CoE Dean's Honor List (4x), and University Honors (4x)

EXPERIENCE

Graduate Research Assistant — Jan. 2017 – Now

St-Pierre Lab, Baylor College of Medicine, Houston, Texas
- Develop high-throughput screening platforms for genetically encoded voltage indicator (GEVI) and other biosensors, capable of applying electrical field stimulation, drug addition, and photoactivation.
- Analyze fluorescent microscopy images and videos using MATLAB to extract sensor dynamic range, brightness, kinetics, and photostability properties, and thus rank mutagenesis library candidates.

Teaching Assistant (ELEC326 Digital Logic Design), *Rice University* — Fall 2017
- Graded lab reports and homework on Verilog.
- Held lab sessions on FPGA board development.

Undergraduate Research Assistant, *Shea Lab, UM* — May 2015 – Mar. 2016
- Developed techniques of bioluminescence living cell microarrays.
- Studied the time-dependent transcription factor / microRNA activity using R for statistical analysis.
- Performed plasmid cloning of 110 microRNA to make luciferase reporters.
- Conducted lentiviruses production and the transfection on target human cells.

PROJECT

Low Cost SLAM Realization on Smart Phone (SJTU Thesis) — Aug. 2016
- Transplanted a PC-based SLAM algorithm to an Android device to assist autonomous driving.

Force Gauge for the Removal of Epidural Catheters (UM Thesis) — Apr. 2016
- Developed an add-on single-use mechanical gauge to indicate internal force of the catheter and prevent its breakage.

Facial EMG as a Computer Input Method and a Communication Aid — Dec. 2015
- Built a LabVIEW system capable of controlling the mouse cursor and selecting words/letters using only 3 channels of facial EMG signals, intended for people with speech and/or dexterity difficulties.

The Effect of Electrode Position on Human Biceps EMG Amplitude — Apr. 2015
- Reassessed and cast doubt on the necessity of using the assigned electrode position to yield best signal.

SKILLS

Computer Coding:	MATLAB, Mathematica, Visual Basic, C/C++, LATEX, R
Software Application:	LabVIEW, Pspice, Xilinx, Photoshop, Premiere
Hardware development:	Raspberry Pi, Arduino, FPGA
Languages:	Chinese (native), English (fluent)
Liberal Arts / Hobbies:	Graphic design, Phonetics, Numismatics, Astrophotography, Calligraphy

Jan. 2018