XIAOFENG GAO

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EDUCATION

University of California, Los Angeles *September 2017 - present*
Ph.D student in Statistics
Advisor: Song-Chun Zhu
Areas of Focus: Cognitive Modeling

Fudan University *September 2013 - June 2017*
Bachelor in Electronic and Information Science and Technology **Overall GPA: 3.87/4**
School of Information Science and Technology **Ranking: 1/221**

PUBLICATIONS

Tianmin Shu, Xiaofeng Gao, M. S. Ryoo and Song-Chun Zhu. Learning Social Affordance Grammar from Videos: Transferring Human Interactions to Human-Robot Interactions. *IEEE International Conference on Robotics and Automation (ICRA), 2017.*

RESEARCH EXPERIENCE

Human Robot Interaction based on Machine Learning University of California, Los Angeles
CSST Program, mentor: Song-Chun Zhu *Jul, 2016 - Sep, 2016*

- Designed a generative model which represented human interactions in a hierarchical way
- Transferred the knowledge to enable a real-time motion inference of human-robot interactions
- Conducted experiments of real Baxter test and simulation to evaluate the model with ROS programming
- Submitted a paper to ICRA and presented the work at a poster session and a peer seminar

UAV-Based Large Scale Outdoor Object Reconstruction System Fudan University
Undergraduate Research Program, Team of 4, mentor: Bo Hu *Sep, 2015 - Jun, 2016*

- Implemented a 3D reconstruction system, including a portable ground station and a hexacopter
- Enabled the ground station to receive real-time reconstruction results via 4G-LTE; received copters flight status and sent back the control commands via a wireless serial transceiver module
- Applied ultrasonic sensors to the hexacopter for obstacle avoidance, Pixhawk for flight control, a stereo RGB camera for data collection, and Intel NUC for data storage and computation
- Managed to reconstruct the 3D models of large scale outdoor objects, based on an online 3D reconstruction system built upon ORB-SLAM and an offline reconstruction system built upon CMVS
- Designed an interface on the ground station to display flight status and plan a flight path for the copter

AWARDS & HONORS

Outstanding Graduate Award, Shanghai Municipal Education Commission *May, 2017*
Shanghai Government Scholarship, Shanghai Municipal Education Commission *Nov, 2016*
Junyuan Undergraduate Scholarship, Shanghai Tang Junyuan Foundation *Nov, 2016*
UCLA Cross-disciplinary Scholars in Science and Technology Scholarship *July, 2016*
First Prize in China Undergraduate Mathematical Contest in Modeling *Nov, 2015*
Designed an algorithm to extract from a video of 30 minutes the shadow movement of an upright pole on the ground, localize the pole and find out the date when the video was recorded

NOTABLE COURSEWORK

Dynamic Memory Allocator — Fudan University
Computer Theory and System Project, Personal — *May, 2016 - Jun, 2016*

- Implemented with C programming an efficient dynamic storage allocator, e.g. malloc, free, realloc
- Used segregated free list as the data structure and achieved high space utilization and throughput

Image Deblurring — Fudan University
Computer Theory and System Project, Team of 3 — *Apr, 2016 - Jun, 2016*

- Implemented an algorithm based on Lucy-Richardson filtering to recover clear objects from blurred ones (caused by moving) by analyzing the direction and distance of movement
- Optimized the program by calling external C functions in Matlab and achieved speed-up ratio of 200
- Collaborated with other students to build a license-plate recognition system which worked well for blurred images

Word Frequency Analysis — Fudan University
Computer Theory and System Project, Personal — *Mar, 2016*

- Wrote a C program to analyze the frequencies of words in a document written in English
- Used a hash table to save the words, with each of the hash buckets organized as a singly-linked list

Communication System based on Sound Cards — Fudan University
Communication Principles Project, Team of 3 — *Dec, 2015*

- Designed a time division duplex (TDD) wireless communication system utilizing sound cards to transmit information at audible frequencies between two computers
- Tested sound cards to make full use of the band and avoid interference from noises, e.g. music, talking
- Designed package head for synchronization and decoded message with intensity-adaptive threshold
- Implemented the system with Matlab and achieved a transmitting speed of 1600 bits per second

Image Encoder Design — Fudan University
Project of Information Theory, Team of 3 — *Mar, 2015 - Apr, 2015*

- Implemented with C an image compression encoder based on self-learned JPEG standard
- Adopted cyclic redundancy check and "Fire" Code as channel encoder to ensure reliable transmission

Regression on Fetal Weights — Fudan University
Project of Probability and Mathematical Statistics, Personal — *Dec, 2014*

- Tested different combinations of input variables for linear regression and compared predictions with those from Hadlock4 by analysis of variance of mean percentage error and Pearson correlation

A/D Converter System Design — Fudan University
Project of Digital Circuit, Personal — *Dec, 2014*

- Designed a 6-digit analog-to-digital converter system based on successive-approximation method
- The first in class to implement the system on a circuit board with logic gates and flip-flops

Taximeter Control System based on FPGA — Fudan University
Project of Digital Circuit, Personal — *Nov, 2014*

- Used Xilinx ISE to design all the submodules and circuits of the taximeter, which measured the time, calculated the expense and displayed them on a screen
- Made use of several buttons on board to manually set fees and start/stop/reset the meter
- Kept the screen flickering when the expense overflew, due to limited LED screen units

TECHNICAL SKILLS

Programming	C/C++, MATLAB, Python, R, STM32 Programming
Software & Tools	ORCAD, Xilinx ISE, Latex, ROS, SPSS
Practical Experience	Engineering Drawing with AutoCAD, 3D Printing, Metal Work