Xieyang Liu

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Education

09/2015 – 04/2017 **University of Michigan**
Ann Arbor, MI B.S.E. in Computer Science Engineering
Advisor: Dr. Walter Lasecki
GPA: 3.92

09/2013 – 08/2017 **University of Michigan – Shanghai Jiao Tong University Joint Institute**
Shanghai, China B.S.E. in Electrical and Computer Engineering
Advisor: Dr. Jing Liu
GPA: 3.79

Projects

07/2016 – present **Learning to Boosting Super-class Classifier Performances Using Sub-class information**
Undergraduate Researcher
- Investigated the impact of added subclass information on the performances of traditional machine learning classifiers.
- Built an efficient web-based image labeling tool for gathering superclass and subclass information from the crowd.

07/2016 – present **Project EasyDraw: An Addition to Assisitive Technology**
Software Engineer
- Lead the development of an iPad-based specialized figure and diagram editting application that enables people with physical disabilities to draw professional free-body diagrams.

05/2016 – present **Computer Vision and Crowdsourcing for Vehicle Crash Analysis**
Undergraduate Researcher
- Created a reconfigurable, web-based vehicle crash scene annotation UI that enables crowd workers to efficiently and effectively provide information about a visual scene, such as object labels and measurements.
- Constructed a reusable annotation server backend that recruits crowd workers for real-time tasks, collects responses, and visualizes the collected data.
- Iteratively designed ways to boost worker performance and improve system reliability on Amazon MTurk.

10/2015 – 11/2016
Research Assistant

Learning to Detect Human-Object Interactions (HOI) Using "Humans Interacting with Common Objects" (HICO) Benchmark

- Developed an Amazon MTurk-based image annotation toolkit as well as its corresponding automated evaluation systems that boost worker-end annotating efficiency and facilitate large-scale image data extractions.
- Implemented and revised a Python-based back-end interface using Amazon provided APIs that supports instant data collection and progress check.
- Contributed to the development of a novel DNN-based framework for HOI detection called Human-Object Region- based Convolutional Neural Networks (HO-RCNN) that significantly improves the performance of HOI detection by exploiting human-object spatial relations, and achieves state of the art performance.

03/2015 – 08/2015
Software Engineer

Smart Belt for the Elderly & Health Management System

- Built a smart wearable device mounted on belts and developed its corresponding smart phone application that automatically detects fall-overs of the elderly and calls for help.
- Developed a health platform that keeps track of users' movement and health status in the hope of improving living qualities of the elders and boosting medical treatment development in China.

05/2014 – 09/2014
Project Leader
&
Software Engineer

Portable Laser Guitar

- Created a new concept guitar with laser beams replacing the conventional strings.
- Developed control algorithms and programs on the in-body Arduino microcontroller.

Publications

Y.-W. Chao, Y. Liu, **X. Liu**, and J. Deng. Learning to Detect Human-Object Interactions. *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2017.* in review.

Professional Experience

04/2016 – present
Ann Arbor, MI

Crowds and Machines Lab, University of Michigan
Undergraduate Researcher (Advisor: Dr. Walter Lasecki)
Worked on crowd-powered interdisciplinary projects that address novel and promising research questions.

Apr/2016 – present
Ann Arbor, MI

Center for Ergonomics, University of Michigan
Research Assistant (Advisor: Prof. Charles Woolley)
Worked with a software engineering team to develop and maintain the commercially available 3D Static Strength Prediction Program (3D SSPP).

10/2015 – 04/2016
Ann Arbor, MI

Vision and Learning Lab, University of Michigan
Research Assistant (Advisor: Dr. Jia Deng)
Worked on a CV-based toolkit that boosts performance on HOI detection by exploiting human-object spatial relations.

Teaching

09/2016 – present **Instructional Aide – EECS484 Database Management Systems**
Umich Prepare and lead weekly discussion sessions and office hours that facilitate students' learning process. Develop teaching materials and course projects. Grade assignments and exams.

05/2015 – 08/2015 **Teaching Assistant – Vv255 Multivariate Calculus**
SJTU Developed discussion slides and in-class exercises, led weekly discussion sessions, held office hours, graded.

Honors and Awards

07/2015, 07/2016 **UM-SJTU Joint Institute**
Tang-Junyuan Fellowship (Top 2)

12/2015, 04/2016 **University of Michigan**
Dean's List

08/2015 **Center for Learning and Teaching, UM-SJTU Joint Institute**
Basic Teaching Assistant Certificate

12/2013, 08/2014, 12/2014, 08/2015 **UM-SJTU Joint Institute**
Dean's List

06/2015 **Shanghai Jiao Tong University**
Fellowship for Outstanding Academic Performance

04/2015 **COMAP Mathematical Contest in Modeling**
Meritorious Winner (Acceptance: 9%)

Skills

Languages & Libraries
C/C++, Python, JavaScript, CSS, HTML5, Swift 3.0, SQL, jQuery, Bootstrap

Software & Platforms
MATLAB, Git, Visual Studio, Amazon Mechanical Turk, LaTeX, Photoshop