Xieyang Liu

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Education

09/2015 – 04/2017 *Ann Arbor, MI*	**University of Michigan** B.S. in Computer Science Engineering Advisor: Dr. Walter Lasecki GPA: 3.92
09/2013 – 08/2017 *Shanghai, China*	**University of Michigan – Shanghai Jiao Tong University Joint Institute** B.S.E. in Electrical and Computer Engineering Advisor: Dr. Jing Liu GPA: 3.79

Projects

07/2016 – present *Undergraduate* *Researcher*	**Learning to Boosting Super-class Classifier Performances Using Sub-class information** • 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 *Software Engineer*	**Project EasyDraw: An Addition to Assisitive Technology** • 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 *Undergraduate* *Researcher*	**Computer Vision and Crowdsourcing for Vehicle Crash Analysis** • 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

Yu-Wei Chao, Yunfan Liu, **Xieyang Liu**, Jia Deng. Learning to Detect Human-Object Interactions. (submitted to CVPR 2017)

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* *Umich*	**Instructional Aide – EECS484 Database Management Systems** 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 *SJTU*	**Teaching Assistant – Vv255 Multivariate Calculus** 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