

# Xieyang Liu

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## Education

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09/2015 – 04/2017 **University of Michigan**  
Ann Arbor, MI B.S. 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

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07/2016 – present **Learning to Boosting Machine Learning Classifier Performances Using Sub-class information**  
Undergraduate Researcher Advised by Dr. Walter Lasecki

- Investigate the impact of added subclass information on the performances of traditional machine learning classifiers.
- Iteratively build an efficient web-based image labeling tool to gather superclass and subclass information from the crowd.
- Develop an automated system for labeling result visualization and analysis.

05/2016 – present **Computer Vision and Crowdsourcing for Vehicle Crash Analysis**  
Undergraduate Researcher Advised by Dr. Walter Lasecki & Dr. Jason Corso

- 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 **Learning to Detect Human-Object Interactions (HOI)**

Research Assistant *Advised by Dr. Jia Deng*

- 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 that significantly improves the performance of HOI detection by exploiting human-object spatial relations, and achieves state-of-the-art performance.
- Submitted work to CVPR 2017

08/2016 – present **Project EasyDraw: An Addition to Assisitive Technology**

Software Engineer *Advised by Dr. David Chesney*

- Lead the development of an iPad-based specialized figure and diagram editing application that enables people with physical disabilities to draw professional free-body diagrams.

## Research Interests

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Human-computer interaction, crowd-powered intelligent systems, user interface software & technology, interactive machine learning

## Publications

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

## Professional Experience

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04/2016 – present **Crowds and Machines Lab, University of Michigan**

Ann Arbor, MI Undergraduate Researcher (*Advisor: Dr. Walter Lasecki*)

Worked on crowd-powered interdisciplinary projects that address novel and promising research questions.

Apr/2016 – present **Center for Ergonomics, University of Michigan**

Ann Arbor, MI Research Assistant (*Advisor: Prof. Charles Woolley*)

Develop and maintain the commercially available 3D Static Strength Prediction Program (3D SSPP).

10/2015 – 04/2016 **Vision and Learning Lab, University of Michigan**

Ann Arbor, MI 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

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- 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

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- 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, **UM-SJTU Joint Institute**  
12/2014, 08/2015 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

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### Languages & Libraries

C/C++, Python, JavaScript, CSS, HTML5, Swift 3.0, Java, SQL, jQuery, Bootstrap

### Software & Platforms

MATLAB, Git, Visual Studio, Amazon Mechanical Turk, L<sup>A</sup>T<sub>E</sub>X, Photoshop, MongoDB

## Tests

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TOEFL Total: 116 / 120  
(Internet-based Test) Reading: 30 / 30, Listening: 29 / 30, Speaking: 28 / 30, Writing: 29 / 30

GRE Verbal: 157 / 170, Quantitative: 170 / 170, Analytical Writing: 4.0 / 6.0