

# Xieyang Liu

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## EDUCATION

- **University of Michigan**, Ann Arbor, MI Sept 2015 - May 2017
    - *B.S.E.* in Computer Science Engineering (Dual Degree Program)
    - GPA: 3.84/4.00
  - **Shanghai Jiao Tong University (SJTU)**, Shanghai, China Sept 2013 - Aug 2015
    - *B.S.E.* in Electrical and Computer Engineering
    - GPA: 3.81/4.00
- Relevant Courses:** Data Structures and Algorithms, Computer Architectures, Machine Learning (Taking), Database Management Systems (Taking), Operating Systems (Taking)
- Honors and Awards:** Meritorious Winner of 2015 Mathematical Contest in Modeling-COMAP (Sophomore year), Tang Jun-Yuan SJTU Scholarship (Top 2), Scholarship for Outstanding Academic Performance, Dean's List
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## PROJECTS

- **Visual Recognition of Human-Object Interactions (HOI) using “Humans Interacting with Common Objects” (HICO) Benchmark** *Research Assistant* Oct 2015 - Present
    - Develop 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 extraction**.
    - Construct a well-rounded **HICO** dataset that contains 47,774 images with 600 human-object interaction categories.
    - Apply machine learning techniques to help computers understand the human actions as well as locate human and objects in newly-encountered images (Expected completion: Mar 2016).
  - **Smart Belt for the Elderly & Health Management System** *Technical Consultant* Mar 2015 - Present
    - Build a smart wearable device mounted on belts and develop its corresponding smart phone application that **automatically** detects fall-overs of the elderly and calls for help from doctors, hospitals, and families.
    - Add popular functionalities like heart-rate monitoring to make the device more capable and competitive in market.
    - Develop 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.
  - **Portable Laser Guitar** *Project Leader & Software Engineer* May 2014 - Sept 2014
    - Designed and built a new concept of guitar with laser beams replacing the conventional strings. Implemented an in-body speaker and retractable fret-board.
    - Developed control algorithms and programs on **Arduino microcontroller** for the laser guitar to detect players' finger-styles and make the correct chord tune through the speaker.
    - Reduced the size of a guitar by 50% and limited the maximum latency between a string played and making the correct tune to 0.1s, where human beings are not able to notice.
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## LEADERSHIP/WORK EXPERIENCE

- **Research Assistant** advised by Yu-Wei Chao (PhD) and Dr. Jia Deng Oct 2015 - Present  
*Artificial Intelligence Lab @ University of Michigan*
    - Design various HTML templates and JavaScript files to implement the web-based image annotation toolkit.
    - Develop the automated evaluation system for image annotation evaluation and image data extraction in MATLAB.
    - Design and implement machine learning algorithms to help computer understand human actions and locate human/object positions in future images.
    - Attend weekly group meetings, discuss and tackle technical problems during research and development.
  - **Teaching Assistant for Multivariate Calculus** supervised by Dr. Jing Liu May 2015 - Aug 2015  
*Center for Learning and Teaching (CLT @ UM-SJTU Joint Institute)*
    - Prepared and led weekly recitation sessions and office hours that review the lecture contents as well as cultivate students' problem-solving skills.
    - Graded homework assignments and exams, reported common problems and concerns to the faculty supervisor.
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## SKILLS

- **Programming Languages:** C/C++, Java, JavaScript, CSS, HTML5, Bootstrap, Python
- **Software and Platforms:** Visual Studio, MATLAB, Amazon Mechanical Turk, Git, Photoshop, LaTeX, Xilinx ISE