Bingbin Liu | Curriculum Vitae

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Education

- **Stanford University** — **Stanford, CA**
  M.S. Candidate, Computer Science (AI track), GPA 3.87/4.3 — *September 2017–June 2019*
- **The University of Hong Kong** — **Hong Kong**
  B.Eng. CS Major & Math Minor, GPA 3.93/4.3, Major GPA 4.1/4.3 (First-Class Honour) — *2013–2017*
- **UC Santa Barbara** — **Santa Barbara, CA**
  Exchange Study, GPA 4.0/4.0 — *January – June 2016*
- **UC Berkeley** — **Berkeley, CA**
  Exchange Study, GPA 4.0/4.0 — *summer 2014*

Publications

Video Understanding

- **Verb-Object Graph for Fine-grained Recognition of Egocentric Activities**
  In submission
  Bingbin Liu*, Chien-Yi Chang*, De-An Huang, Li Fei-Fei, Juan Carlos Niebles
- **Temporal Modular Networks for Retrieving Complex Compositional Activities in Videos**
  ECCV18 [link]. Also presented at WiCV workshop.
  Bingbin Liu, Serena Yeung, Edward Chou, De-An Huang, Li Fei-Fei, Juan Carlos Niebles
- **Learning to Decompose and Disentangle Representations for Video Prediction**
  NeurIPS18 [link]
  Jun-Ting Hsieh, **Bingbin Liu**, De-An Huang, Li Fei-Fei, Juan Carlos Niebles

AI-Assisted Healthcare

- **Descriptive Analysis of ICU Patient Mobilization from Depth Videos**
  ML4H18 (workshop)
  Laëtitia Shao*, Zaid Nabulsi*, Ruchir Rastogi*, **Bingbin Liu**, Francesca Rinaldo, Serena Yeung, N. Lance Downing, William Beninati, Arnold Milstein, Li Fei-Fei
- **A Computer Vision System to Detect Bedside Patient Mobilization**
  In submission
  Serena Yeung*, Francesca Rinaldo*, Jeffrey Jopling, **Bingbin Liu**, Rishab Mehra, Lance Downing, Michelle Guo, Gabriel Bianconi, Alexandre Alahi, Julia Lee, Brandi Campbell, Kayla Deru, William Beninati, Li Fei-Fei, Arnold Milstein
- **3D Point Cloud-Based Visual Prediction of ICU Mobility Care Activities**
  MLHC18 [link]
  Bingbin Liu*, Michelle Guo*, Edward Chou, Rishab Mehra, Serena Yeung, N. Lance Downing, Francesca Rinaldo, Jeffrey Jopling, Branci Campbell, Kayla Deru, William Beninati, Arnold Milstein, Li Fei-Fei

Experience

- **Graduate Research Assistant** — **Stanford University**
  Fine-grained action recognition in egocentric videos. — *July - Dec 2018*
- **Independent Study** — **Stanford University**
  Partnership in AI-Assisted Care (PAC) at Vision Lab. Action recognition in depth videos. — *Fall 2017 - Spring 2018*
- **Group IT Intern - Enterprise and Analytics** — **CLP Power Hong Kong Limited**
  Data analysis for enhancing internal IT services for help desk and critical systems. — *Summer 2016*
- **Software Engineering Intern** — **Hututa Technologies Limited**
  Test and development of a system for efficient big data processing. — *Summer 2015*

Teaching and Mentorship

- **Graduate Teaching Assistant** — **Stanford University**
  MED277/CS337 - AI-Assisted Health Care — *Fall 2018*
- **Graduate Teaching Assistant** — **Stanford University**
  CS231N - Convolutional Neural Networks for Visual Recognition — *Spring 2018*
- **AI4ALL** — **Stanford University**
  Research mentor of the NLP team. [website] — *Summer 2018*
- **Girls teach Girls to Code** — **Stanford University**
  Mentor lead for the AI track. [website] — *Spring 2018*

Projects

- **Intensive Care Unit Clinical Pathway Support** *PAC, Stanford University*
  Building a system for vision-based automated documentation of ICU care activities for analyzing patient mobilization. Ongoing project; joined since October 2017.
- **Stacked Attention for Visual Question Answering** *CS224N, Stanford University*
  Use LSTM as the language model and applied stacked spatial attention layers to capture the interaction between words and visual region for VQA tasks on the Visual7W dataset.
- **Automatic Melody Transcription** *CS229, Stanford University*
  Pre-process input audios into different types of spectrograms for timbre-invariant features; apply CNN on the spectrograms to predict music notes, and post-process with HMM for melody tracking.
- **Cell Classification and Counting** *Summer research (2017), The University of Hong Kong*
  Use MSER and CNN to classify and count bacteria in microscopic images to improve efficiency and reliability of BV diagnosis.
- **Object Recognition in Videos** *Final Year Project, The University of Hong Kong*
  Base on T-CNN (Caffe) and use volumetric convolution (torch) and post-processing (MATLAB and Python) to leverage temporal and contextual information to handle complexities such as motion blur and occlusion.
- **Compiler (Undergraduate Research)** *UC Santa Barbara*
  Build a compiler in Haskell for a research project which aims at devising a functional ISA for simplified formal verification at the programming language lab.

Awards

- **Women in Computer Vision Travel Grant** *WiCV 2018*
- **Powering a Sustainable Generation Scholarship by CLP** *2015*
- **HKU World Wide Scholarship** *2015*
- **Dean's Honours List** *2013 - 2017*
- **Entrance Scholarship for Outstanding Mainland Students** *2013 - 2017*