Yingwei Li

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Education

- **Fudan University** — Shanghai
  B.S. in Computer Science, Honor Class — *Sep. 2014 - Present*
  - Overall GPA: 93.5/100 (Rank 7 / 107)
  - Major GPA: 98.7/100 (Top 3 in 107)
  - Core Courses : Introduction to Artificial Intelligence, Computer Vision, Digital Signal Processing and Speech Signal Analysis, Human-Computer Interaction, Algebra Structure and Mathematical Logic, Software Architecture, etc. (obtained 12 A and 2 A- in all major courses)

- **National Taiwan University** — Taipei
  Exchange Student in Computer Science & Information Engineering Feb 2017-Jun 2017 (Expected)

Research Experience

- **Multiple Object Tracking Research** — Research Intern, TuSimple, Inc., Beijing
  Mentor: Dr. Naiyan Wang (Principal scientist in TuSimple) — *July 2016 - Present*
  - Conducted a systematic literature review on tracking algorithms, and reproduced several recent papers, such as Efficient Online Min-Cost Flow Tracking with Bounded Memory and Computation, Siamese Instance Search for Tracking, Faster RCNN, etc.
  - Proposed a novel method to accelerate the tracking algorithm based on a multitask CNN, simultaneously extracting the appearance feature and detecting the object.
  - Impleamented the codes with MXNet and conducted a variety of experiment. Improved the siamese loss function and training method.
  - Tested on MOT2016 dataset, and saved nearly 50% executing time compared to the traditional detection-based tracking algorithm.
  - Currently working on optimizing the network structure and parameter to extracting better feature.

- **CNN-based Object Detection and Re-identification** — Fudan University
  Advisor: Prof. Wei Zhang, Prof. Xiangyang Xue (Associate Dean) — *April 2016 - Present*
  - Completed a literature summary of all literature papers on CNN-based object detection and their references since 2014.
  - Reproduced results of Fast-RCNN, Faster-RCNN and YOLO.
  - Funded by Chun-Tsung undergraduate research project.
  - Proposed a noval idea for people re-identification based on hypernetworks, and still reading related papers.

- **SIFT-based Logo Recognition** Shanghai Key Laboratory of Intelligent Information Processing
  Supervisor: Wei Zhang — *June 2015 - Sept 2015*
  - Took advantage of the fact that logo is relatively fixed and utilized contextual information to improve performance based on SIFT.
  - Tested with Volkswagen logos collected from roads, and obtained 90% accuracy, 80% precision and recall.

Selected Course Projects

- **Course Helper** — Fudan University
  Course Project for HCI, Instructor: Xianghua Ding — *Mar 2016 - June 2016*
    - Obtained the best performance of the class in the project evaluation.
    - Conducted extensive survey and interviews. Gained deep insights about students' pain points with course registration and validated the necessity in implementing each functionality.
    - Developed a Web APP with user interface designed through multiple HCI experiments.
    - The APP is widely used among several classes and saved 80% time on average according to the survey.

- **LiLearning – Online Homework Submission System** — Fudan University
  Course project for Database Systems, Instructor: Shuigeng Zhou — *Mar 2016 - June 2016*
    - Developed with Koajs, MySQL, Redis and Bootstrap.
    - Simple, elegant, easy to use.
    - Applied extensive SQL injection prevention.
    - Optimized for database queries.

- **Management of Spatial-Temporal Data** — Fudan University
  Course project for Data Structures, Instructor: Weiwei Sun — *Setp 2015 - Dec 2015*
    - Plotted maps with OpenCV2 using data from OpenStreetMap. Handled details like the layering of elevated roads. Plotting results can beat commericial map softwares.
    - Applied shortest path algorithms like A*, Dijkstra and SPFA. Validated their optimalities with sampling.
    - Compared the performance of different data structures for high-dimensional indexing like KD-tree, R-tree and nested trees.
    - Utilized taxi trajectory data to provide potential customer information for drivers at a specific time and location.

Selected Honors & Awards

Oct. 2016 Excellent Student of Fudan University (top 10%)

Sep. 2016 First Prize Scholarship from Fudan University Education Development Foundation(top 5%)

Oct. 2015 Second Prize, Shanghai College Student Mathematical Contest in Modeling

Sep. 2015 SCSK Scholarship (Only 2 in the Honor Class)

Nov. 2014 Silver Medal, ACM-ICPC Shanghai Regional Contest

Jul. 2013 Bronze Medal, China National Olympiad in Informatics

Skills

Languages: C/C++, Python, Javascript, Matlab, HTML, VHDL ...

Deep Learning Library: MXNet, Caffe

Interests

- Deep Learning and Computer Vision
- Contemporary Art (Long-time volunteer at Museum of Contemporary Art Shanghai)