

# LI, WENYUAN

(Seeking Machine Learning Intern in 2019 Summer)

Cell: [424-324-0318](tel:424-324-0318) Email: [liwenyuan.zju@gmail.com](mailto:liwenyuan.zju@gmail.com) Website: <https://wenyuan-vincent-li.github.io/>

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## EDUCATION

### **University of California, Los Angeles, USA**

Ph.D Candidate in Electrical and Computer Engineering GPA: 4.00/4.00

M.S. in Electrical Engineering (2016) M.S. minor in Statistics GPA: 3.93/4.00

### **Zhejiang University, P.R.China**

B.S. in Electrical Engineering (Optics) (2014) GPA: 3.96/4.00

## SKILLS

- Machine Learning: CNN, GAN, R-CNN, SVM, XGBoost, Random forest, Logistic Regression, etc.
- Data Processing: Dimension Reduction, Pandas, OpenCV, etc.
- Programming: Python, Tensorflow, Scikit-learn, Flask, Java, C++, Matlab, etc.

## RESEARCH AND WORK EXPERIENCE

### **IQVIA: Machine Learning Research Intern (07/18-09/18)**

- Develop a semi-supervised rare disease detection framework using generative adversarial networks.
- Leverage a large amount of un-labeled data (1.5 million patient records).
- Precision-recall AUC score beats common classifier (logistic regression, random forest, etc) by 5%.
- Develop a flask-based API using the trained model.

### **Medical image segmentation based on multitask learning (11/17-06/18)**

- Design a two-branch deep learning “Path R-CNN” architecture based on R-CNN.
- Model decouples the classification and segmentation task and modified to depress false positive rate.
- The new architecture boosts the segmentation performance by 7% compared to the state-of-the-art U-Net.

### **Neural dynamics: better disease diagnosis and faster neuromorphic computing (06/15-09/17)**

- Design a recurrent neural network (RNN) and emulate neural dynamics on Neuromorphic Circuits.
- Construct a brain phase diagram for better mental disease prediction.
- Study the relationship between neural dynamics and computing convergence rate.

### **Object tracking using optical flow method (12/14-04/15)**

- Track Skyrmion (a type of physics particle) in video using optical flow algorithm.
- Generate movement statistics, such as moving direction, distance, velocity, etc.

## SELECTED PUBLICATIONS

- **Li W**, Li J, Sarma KV, Ho KC, Shen S, Knudsen BS, Gertych A, Arnold CW. Path R-CNN for Prostate Cancer Diagnosis and Gleason Grading of Histological Images. *IEEE transactions on medical imaging*. 2018 Oct 12.
- **Li W**, Ovchinnikov IV, Chen H, Wang Z, Lee A, Lee H, Cepeda C, Schwartz RN, Meier K, Wang KL. A Brain Phase Diagram of Neuronal Dynamics. *Neural computation*. 2018 Jun 12:1-21.
- Yu G, Upadhyaya P, Li X, **Li W**, Kim SK, Fan Y, Wong KL, Tserkovnyak Y, Amiri PK, Wang KL. Room-temperature creation and spin-orbit torque manipulation of skyrmions in thin films with engineered asymmetry. *Nano letters*. 2016 Feb 11;16(3):1981-8.

## SELECTED HONORS AND AWARDS

- Electrical Engineering Department Fellowship, UCLA, 2014
- Chiang Chen Overseas Fellowship, 2014
- National Scholarship in China (top 2%), 2013