

# Qiao Liu – Curriculum Vitae

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<b>Address</b>	James H. Clark Center Stanford, CA, 94305	<b>Mobile Phone</b>	(+1)6502835489 (+86)18810226334
<b>Website</b>	<a href="https://liu-q16.github.io/">https://liu-q16.github.io/</a>	<b>Email</b>	liu-q16@mails.tsinghua.edu.cn liuqiao@stanford.edu

## Research Statement

I'm a visiting scholar at Department of Statistics, Stanford University working with Prof. **Wing Hung Wong** on statistical learning and computational biology. In particular, I am interested in developing machine learning algorithms, especially deep learning algorithms with applications in both general statistics and specific problems in computational biology.

## Education

<b>2019.09- Present</b>	Visiting Scholar - Stanford University, Stanford, USA Department of Statistics, advised by Prof. <b>Wing Hung Wong</b> (NAS member) Developing machine learning algorithms with applications in both general statistics and biomedical data
<b>2016.09- 2020.06</b>	Ph.D. candidate in <b>Control Science and Engineering</b> - Tsinghua University, Beijing, China Department of Automation, advised by tenured Assoc. Prof. <b>Rui Jiang</b> Tsinghua National Laboratory for Informatics and Technology (TNLIST)
<b>2015.08- 2016.01</b>	Exchange Student - Lund University, Lund, Sweden Department of Computer Science GPA: <b>5.0</b> /5.0
<b>2012.09- 2016.06</b>	Bachelor in <b>Engineering</b> - Beihang University, Beijing, China ShenYuan Honors College (formerly School of Advanced Engineering) GPA: <b>91.5</b> /100, Rank: <b>2</b> /50

## Internships

<b>2019.06- 2019.09</b>	Research Intern - SenseTime Inc, Beijing, China AI+Healthcare, mentored by Dr. <b>Mu Zhou</b> Developing ML algorithms for drug sensitivity prediction and novel drug discovery
<b>2015.09- 2015.12</b>	Undergraduate Intern - LUGG Lab, Lund, Sweden Lund University Graphics Group, advised by Assoc. Prof. <b>Michael Doggett</b> Developing and maintaining RenderChimp graphics applications platform

## Publications

- Liu Q**, Hu Z, Zhou M. Cancer drug response prediction via a hybrid graph convolutional network[C]. *Intelligent Systems for Molecular Biology (ISMB)*. 2020. (submitted)
- Liu Q**, Wong W H, Jiang R. Incorporating gene expression in genome-wide prediction of chromatin accessibility via deep learning[J]. *Intelligent Systems for Molecular Biology (ISMB)*, 2020. (submitted)
- Xu C, **Liu Q**, Feng J, Jiang T. Quantifying functional impacts of regulatory variants with multi-task Bayesian neural network[J]. *Bioinformatics* 2019.

4. Chen P\*, **Liu Q\***, Lv H, Fei X. Automatically structuring on Chinese ultrasound report of cerebrovascular diseases via natural language processing[J]. *IEEE Access*, 2019, 7: 89043-89050. (Co-first author, Q1)
5. Song S, Cui H, **Liu Q**, Jiang R. EpiFIT: Functional interpretation of transcription factors based on combination of sequence and epigenetic information[J]. *Quantitative Biology*, 2019, 1-11.
6. **Liu Q**, Lv H, Jiang R. hicGAN infers super resolution Hi-C data with generative adversarial networks. *ISMB/ECCB, Bioinformatics*, 2019, 35(14): i99-i107. (conference acceptance rate:18.9%, Q1)
7. Yin Q, Wu M, **Liu Q**, Jiang R. DeepHistone: a deep learning approach to predicting histone modifications[J]. *BMC Genomics*, 2019,20(2):193. (Q2)
8. Yang Q, **Liu Q**, LV H. A Decentralized System for Medical Data Management via Blockchain [J]. *Journal of Internet Technology*, 2019. (under review)
9. Liu J, **Liu Q**, Yang Q. A robust approach for estimating parameters during sepciation with gene flow [J]. *Bioinformatics*, 2019. (under review)
10. **Liu Q**, Xia F, Yin Q, et al. Chromatin accessibility prediction via a hybrid deep convolutional neural network[J]. *Bioinformatics*, 2017, 34(5): 732-738. (Q1)
11. **Liu Q**, Gan M, Jiang R. A sequence-based method to predict the impact of regulatory variants using random forest[J]. *BMC Systems Biology*, 2017, 11(2): 7. (Q2)
12. Li B, Lin M, **Liu Q**, et al. Protein folding optimization based on 3D off-lattice model via an improved artificial bee colony algorithm[J]. *Journal of Molecular Modeling*, 2015, 21(10): 261. (Q2)

## Invited Talks

<b>2019.11</b>	<b>BIBM 2019</b> (2019 IEEE International Conference on Bioinformatics & Biomedicine), San Diego, USA
<b>2019.07</b>	<b>ISMB 2019</b> (The 27th Conference on Intellegent Systems for Molecular Biology), Basel, Switzerland
<b>2019.03</b>	<b>BUFAAI 2019</b> (The First Beijing Universities Academic Forum of Artificial Intelligence), Beijing, China
<b>2017.01</b>	<b>APBC 2017</b> (The Fifteenth Asia Pacific Bioinformatics Conference), Shenzhen, China

## Honers and Awards

<b>2019.10</b>	<b>The First Class Scholarship</b> , Tsinghua University
<b>2019.04</b>	<b>ISMB Travel Fellowship</b> , International Society for Computational Biology
<b>2018.10</b>	<b>National Scholarship</b> , Ministry of Education of China (7 Ph.D. students in Department of Automation, Tsinghua University)
<b>2017.10</b>	<b>The First Class Scholarship</b> , Tsinghua University
<b>2016.06</b>	<b>Outstanding Graduates of Beijing</b> , Beijing Municipal Commission of Education
<b>2016.06</b>	<b>Outstanding Graduates of Beihang University</b> , Beihang University
<b>2016.05</b>	<b>Rui An First Prize Scholarship</b> , Rui An Inc
<b>2015.10</b>	<b>National Encouragement Scholarship</b> , Ministry of Education of China
<b>2015.06</b>	<b>Microsoft Young Fellowship</b> , Microsoft Research Asia ( <b>40</b> undergraduates among top universities in China)
<b>2014.10</b>	<b>National Encouragement Scholarship</b> , Ministry of Education of China
<b>2013.10</b>	<b>National Encouragement Scholarship</b> , Ministry of Education of China
<b>2012.09</b>	<b>Excellent Freshman Prize</b> , Beihang University

## Competitions

<b>2019.03</b>	<b>Liver Cancer Image Diagnose Competition</b> , rank:2/1397, Digital China Innovation Contest, DCIC 2019
<b>2015.01</b>	<b>Honorable Mention in COMAP's Mathematical Contest in Modeling</b> , The American Mathematical Society
<b>2014.10</b>	<b>1<sup>st</sup> Prize in NCSMC</b> (The 6 <sup>th</sup> National College Students Mathematical Competition),

Chinese Mathematical Society  
**2014.09**     **National 1<sup>st</sup> Prize in CUMCM**(Contemporary Undergraduate Mathematical Contest in Modeling),  
 China Society for Industrial and Applied Mathematics  
**2014.09**     **1<sup>st</sup> Prize in Mathematical Competition**, Beihang University  
**2013.12**     **1<sup>st</sup> Prize in Physical Competition**, Beihang University  
**2013.10**     **1<sup>st</sup> Prize in NCSMC**(The 5<sup>th</sup> National College Students Mathematical Competition),  
 Chinese Mathematical Society

## Technical Strengths

- **Programming Languages**  
 Python,C,Shell,R,Matlab
- **Deep learning software stacks**  
 Keras,TensorFlow,TensorLayer,PyTorch,Lasagne,nolearn,Theano
- **Miscellaneous**  
 Git,OpenMP,Slurm,Flask,Apache Web Servers,MySQL

## Teaching Experiences

**2019.02-**     **Teaching Assistant**, Fundamental Industry Training Center, Tsinghua University  
**2019.06**     **Smart Things and Intelligent Systems**, Undergraduate Course

**2018.09-**     **Teaching Assistant**, Department of Automation, Tsinghua University  
**2019.01**     **Introduction to Artificial Intelligence**, Undergraduate Course

**2017.09-**     **Teaching Assistant**, Department of Automation, Tsinghua University  
**2018.01**     **Introduction to Artificial Intelligence**, Undergraduate Course

**2016.08-**     **Teaching Assistant**, Department of Automation, Tsinghua University  
**2016.09**     **Project of Electronic Circuits**, Undergraduate Summer Course

## Professional Activities

Member of International Society of Computational Biology (ISCB).  
 Student member of Institute of Electrical and Electronics Engineers (IEEE).  
 Reviewer for *GIW*2018, *ISB*2018, *IDASB*2018.