# Qiao Liu – Curriculum Vitae


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| **Address** | James H. Clark Center<br>Stanford, CA, 94305 | **Mobile Phone** | (+86) 18810226334 |
| **Website** | http://kimmo123.me | **Email** | liu-q16@mails.tsinghua.edu.cn<br>liuqiao@stanford.edu |


## Research Statement

My research interests lie in various problems in **Biomedical Informatics** and **Computational Biology**. In particular, I am interested in developing machine learning algorithms for interpreting NGS data and biomedical data.

## Education

**2019.09-Present** Research Scholar - Stanford University, Stanford, USA
Department of Statistics, advised by Prof. **Wing Hung Wong** (NAS member)
Developing statistical and ML algorithms for decoding human genome

**2016.09-2020.06** Ph.D. candidate in **Control Science and Engineering** - Tsinghua University, Beijing, China
Department of Automation, advised by tenured Assoc. Prof. **Rui Jiang**
Tsinghua National Laboratory for Informatics and Technology (TNLIST)

**2015.08-2016.01** Exchange Student - Lund University, Lund, Sweden
Department of Computer Science
GPA:**5.0**/5.0

**2012.09-2016.06** Bachelor in **Engineering** - Beihang University, Beijing, China
ShenYuan Honors College (formerly School of Advanced Engineering)
GPA:**91.5**/100, Rank:**2**/50

## Internships

**2019.06-2019.09** Research Intern - SenseTime Inc, Beijing, China
AI+Healthcare, mentored by Dr. **Mu Zhou**
Developing ML algorithms for drug sensitivity prediction and novel drug discovery

**2015.09-2015.12** Undergraduate Intern - LUGG Lab, Lund, Sweden
Lund University Graphics Group, advised by Assoc. Prof. **Michael Doggett**
Developing and maintaining RenderChimp graphics applications platform

## Publications

1. **Liu Q**, Hu Z, Zhou M. Cancer drug response prediction via a hybrid graph convolutional network[C]. *Proceedings of the AAAI Conference on Artificial Intelligence*. 2019. (under review)
2. Xu C, **Liu Q**, Feng J, Jiang T. Quantifying functional impacts of regulatory variants with multi-task Bayesian neural network[J]. *Bioinformatics* 2019. (accepted)

3. **Liu Q**, Wong W H, Jiang R. Incorporating gene expression in genome-wide prediction of chromatin accessibility via deep learning[J]. *Nucleic acids research*, 2019. (submitted)

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

**2017.01** **APBC 2017**(The Fifteenth Asia Pacific Bioinformatics Conference), Shenzhen, China
**2019.03** **BUAFAI 2019**(The First Beijing Universities Academic Forum of Artificial Intelligence), Beijing, China
**2019.07** **ISMB 2019**(The 27th Conference on Intellegent Systems for Molecular Biology), Basel, Switzerland

## Honers and Awards

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

## Competitions

**2019.03** **Liver Cancer Image Diagnose Competition**, rank:**2**/1397, Digital China Innovation Contest, DCIC 2019
**2015.01** **Honorable Mention in COMAP's Mathematical Contest in Modeling**, The American

Mathematical Society

**2014.10** $1^{st}$ **Prize in NCSMC**(The $6^{th}$ National College Students Mathematical Competition), Chinese Mathematical Society

**2014.09** **National** $1^{st}$ **Prize in CUMCM**(Contemporary Undergraduate Mathematical Contest in Modeling), China Society for Industrial and Applied Mathematics

**2014.09** $1^{st}$ **Prize in Mathematical Competition**, Beihang University

**2013.12** $1^{st}$ **Prize in Physical Competition**, Beihang University

**2013.10** $1^{st}$ **Prize in NCSMC**(The $5^{th}$ 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).
Reviewer for *GIW*2018, *ISB*2018, *IDASB*2018.