Qiao Liu – Curriculum Vitae

Address	James H. Clark Center Stanford, CA, 94305	**Mobile Phone**	(+1)6502835489 (+86)18810226334
Website	http://liuqiao.me/	**Email**	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 problems. 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 and health care.

Education

2019.09- **Present**	Visiting Scholar - Stanford University, Stanford, USA Department of Statistics, advised by Prof. **Wing Hung Wong** (NAS member) Developing machine learning algorithms with applications in both general statistics and biomedical data
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**, Chen S, Jiang R, Wong W H. Simultaneous deep generative modeling and clustering of single cell genomic data[J]. *bioRxiv*, 2020.

2. **Liu Q**, Xu J Z, Jiang R, Wong W H. Roundtrip: A Deep Generatative Neural Density Estimator [C]. *arxiv*, 2020.

3. Xu C, **Liu Q**, Hunag M, Jiang T. Reinforced molecular optimization with neighborhood-controlled grammars[C]. Conference on Neural Information Processing Systems (***NeurIPS***), 2020. (conference acceptance rate:20.1%)

4. Ding K, **Liu Q**, Lee E, et al. Feature-enhanced graph networks for genetic mutational prediction using histopathological images in colon cancer[C]. International Conference on Medical Image Computing and Computer Assisted Intervention (**MICCAI**), 2020 (accepted).

5. **Liu Q**, Hu Z, Zhou M. Cancer drug response prediction via a hybrid graph convolutional network[J]. European Conference on Computational Biology (**ECCB & Bioinformatics**), 2020. (conference acceptance rate:21.2%, JCR Q1)

6. **Liu Q**, Wong W H, Jiang R. Incorporating gene expression in genome-wide prediction of chromatin accessibility via deep learning[J]. *under review*, 2020.

7. Yang Q, **Liu Q**, Lv H. A decentralized system for medical data management via blockchain[J]. *Journal of Internet Technology*, 2020.

8. Liu J, **Liu Q**, Yang Q. Mstree: a multispecies coalescent approach for estimating ancestral population size and divergence time during speciation with gene flow [J]. *Genome biology and evolution*, 2020. (JCR Q2)

9. Xu C, **Liu Q**, Feng J, Jiang T. Quantifying functional impacts of regulatory variants with multi-task Bayesian neural network[J]. *Bioinformatics*, 2019. (JCR Q1)

10. 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, JCR Q1)

11. 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.

12. **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%, JCR Q1)

13. Yin Q, Wu M, **Liu Q**, Jiang R. DeepHistone: a deep learning approach to predicting histone modifications[J]. *BMC Genomics*, 2019,20(2):193. (JCR Q2)

14. Yang Q, **Liu Q**, LV H. A Decentralized System for Medical Data Management via Blockchain [J]. *Journal of Internet Technology*, 2019.

15. **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. (JCR Q1)

16. **Liu Q**, Gan M, Jiang R. A sequence-based method to predict the impact of regulatory variants using random forest[J]. Asia Pacific Bioinformatics Conference (**APBC & BMC Systems Biology**), 2017, 11(2): 7. (JCR Q2)

17. 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. (JCR Q2)

Invited Talks

2020.09   **ECCB 2020**(The 19th European Conference on Computational Biology), Virtual talk due to COVID-19.
2019.11   **BIBM 2019**(2019 IEEE International Conference on Bioinformatics & Biomedicine), San Diego, USA
2019.07   **ISMB 2019**(The 27th Conference on Intellegent Systems for Molecular Biology), Basel, Switzerland
2019.03   **BUAFAI 2019**(The First Beijing Universities Academic Forum of Artificial Intelligence), Beijing, China
2017.01   **APBC 2017**(The Fifteenth Asia Pacific Bioinformatics Conference), Shenzhen, China

Honers and Awards

2020.08   **ECCB Fellowship**, International Society for Computational Biology
2019.10   **The First Class Scholarship**, Tsinghua University
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 Class 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	1st **Prize in NCSMC**(The 6th National College Students Mathematical Competition), Chinese Mathematical Society
2014.09	**National** 1st **Prize in CUMCM**(Contemporary Undergraduate Mathematical Contest in Modeling), China Society for Industrial and Applied Mathematics
2014.09	1st **Prize in Mathematical Competition**, Beihang University
2013.12	1st **Prize in Physical Competition**, Beihang University
2013.10	1st **Prize in NCSMC**(The 5th 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- 2019.06	**Teaching Assistant**, Fundamental Industry Training Center, Tsinghua University **Smart Things and Intelligent Systems**, Undergraduate Course
2018.09- 2019.01	**Teaching Assistant**, Department of Automation, Tsinghua University **Introduction to Artificial Intelligence**, Undergraduate Course
2017.09- 2018.01	**Teaching Assistant**, Department of Automation, Tsinghua University **Introduction to Artificial Intelligence**, Undergraduate Course
2016.08- 2016.09	**Teaching Assistant**, Department of Automation, Tsinghua University **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 *Computational Biology and Bioinformatics*, *GIW* 2018, *ISB* 2018, *IDASB* 2018.