Xupeng **Chen**

Life Science · Tsinghua University

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Education

School of Life Science, Tsinghua University *Beijing, China*

B.S. in Life Science *Sept. 2014 - June. 2019*

- Minor in Statistics
- XueTang program 2015-2019
- XinYa College
- **Related Courses:** • Fundamental Neuroscience • Mathematical Modelling • System and Computational Neuroscience • Biostatistics • Bioinformatics • Pattern Recognition • Artificial Neural Networks • Neuroscience and AI • Machine Learning and Brain Inspired Intelligence

Honors & Awards

2015-2017	**Scholarship**, XueTang scholarship	*University*
2017	**Second prize**, The First National College Students' Brain Computation and Application Competition	*International*
2017	**First Prize**, eMaize Challenge: Machine learning in breeding	*National*
2018	**Meritorious Winner**, Mathematical Contest in Modeling (MCM)	*International*
2015	**Golden Prize**, Social practice award	*University*
2015	**Grand Prize & best captain**, Return to Alma mater activity	*University*

Skills

Computer Science

- Programming skills: Python, C++, Julia, MATLAB, R and Java,
- Familiar with Machine Learning(scikit-learn) and Deep Learning (Tensorflow, Keras)
- Familiar with Image Processing (openCV, ndimage, scikit-image)
- Familiar with Linux, MacOS, Windows

Language

- CET-6, TOEFL (110)

Research Experience

Cardiacai: a deep learning model for cardiac disease detection *Tsinghua University*

Supervisor: Hongliang Yu *2017*

- Use Deep learning models to analyze X-ray chest image
- Design new models to classify disease & design a website
- Win second prize in the contest

Medical data Analysis: Student research training project

Tsinghua University

Supervisor: Xuegong Zhang

2016-2017

- Use Deep learning models to analyze medical images
- Collect X-ray and CT images to detect lung diseases. Use 3D and 2D deep learning model
- Use customized equipment to record individuals long time EGG data and anaylze.

eMaize: Develop a machine learning method to predict quantitative traits of maize

Lu Lab

Supervisor: Zhi Lu

2017-2018

- Develop a new linear mixed model to predict traits of 36,000 hybrids samples using SNP data to find heterosis
- Develop a non-parameter model to solve small sample training problems

Deepshape: Develop a deep learning method to predict icSHAPE and structure of RNA

Lu Lab

Supervisor: Zhi Lu

2017-2018

- Process icSHAPE data to train machine learning and deep learning model
- Transform structure data to image form and develop a modified U-net model to predict

Detection of early-stage colorectal cancer using k-mer profiles of human gut metagenomes

Lu Lab

Supervisor: Zhi Lu

2017

- Develop a very fast method for counting k-mers
- Use clustering and classification machine learning model to identify k-mer markers that could distinguish metagenomic samples between normal subjects and colorectal cancer (CRC) patients