

# 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 • Bio-statistics • 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

National

2017 **First prize**, eMaize Challenge: Machine learning in breeding

National

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++, Java, MATLAB and R
- 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 and heart diseases. Use 3D and 2D deep learning model
- Use customized equipment to record individuals long time EGG data and analyze.

## 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