

# Xinyi LIN

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## Education

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**Sun Yat-sen University** | Guangzhou, China

*Bachelor of Science in Biological Science and Statistics*

09.2014-06.2018

- ◆ GPA: 3.8/4.0
- ◆ Awards: Second Class Scholarship in 2015-2016; Third Class Scholarship in 2014-2015 & 2016-2017
- ◆ Main Courses: Cell Biology, Biochemistry, Genetics, Ecology, Microbiology, Biostatistics, Advanced Mathematics
- ◆ Self-learned Courses: Probability Theory and Statistics, Discrete Mathematics, Geometry and Algebra, Operation Research, Mathematical Analysis, Advanced Language, Data Structure and Algorithms
- ◆ Related Skills: C++, Python, SPSS, MATLAB, R, Oracle, Linux

**Columbia University** | New York, United States

*Bachelor of Science in Biological Science and Statistics*

09.2018-Now

## Research

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***Methylation of the N6 Position of Adenosine ( $m^6A$ )***

Bioinformatics Lab, School of Life Sciences, SYSU

09.2017-06.2018

Role: Research Assistant; Supervisor: Prof. Jian Ren

- ◆ Build an analysis platform to study the allele-specific of  $m^6A$ , abnormality of which may result in critical illness
- ◆ Cooperate with a cancer center to collect large amount of data from cancer patients
- ◆ Enrich the database through other sources such as biomedical information platform or former studies
- ◆ Use statistical and modeling methods together with massive data analysis to figure out whether  $m^6A$  is more likely to happen in certain alleles
- ◆ Predict the most possible position of  $m^6A$  and provide valuable suggestions to biologists for further research

***R Square***

Southern China Center for Statistical Science, SYSU

05.2017-06.2018

Role: Key Member; Supervisor: Prof. Zhenshun Lin, Prof. Xueqin Wang

- ◆ Develop capacity of mathematical modeling, programming as well as data processing through plenty of case analyses mainly based on R and Python
- ◆ Conduct data pre-processing, cleansing and labeling before analysis procedure under the guidance of theories concerning statistics, programming and mathematics
- ◆ Make a report for each data analysis case to present the research findings

***C++ Program***

School of Mathematics, SYSU

02-07.2017

Role: Programmer

- ◆ Wrote a program with C++ to show the campus plot of SYSU, including dormitory, teaching building, canteen, research institute, office building and so on 可以不用加 S
- ◆ Utilized the idea of graph theory; obtained the shortest path with Floyd algorithm between two sites; built a model for site selection and route query according to different coefficients
- ◆ Picked the optimized location for a new teaching building, taking distances with other buildings and students' frequency to the new building into consideration

***Dominance Style of Macaca Mulatta in Nanwan Monkey Island***

Primates and Human Evolution Lab, SYSU

04-10.2016

Role: Chief Researcher; Supervisor: Prof. Peng Zhang

- ◆ Collected thousands of pieces of behavioral data of *Macaca Mulatta* with camera in Nanwan Monkey Island
- ◆ Utilized Excel and Socprog (an app to analyze dominance style of macaque) to calculate the frequency of certain behaviors and deduce the specific dominance style of the targeted macaque group
- ◆ Carried out statistical analysis based on R, using non-parametric test to determine whether there are significant differences in the two sets of data acquired from two groups of *Macaca Mulatta*

### ***Analysis of Seating Distribution in Sun Yat-sen University***

School of Life Sciences, Sun Yat-sen University

03-05.2016

Role: Key Member; Supervisor: Prof. Miao He

- ◆ Interviewed hundreds of students for data collection
- ◆ Used statistical methods (mainly ratio calculating and analysis of variance) to research on the seating distribution of classrooms of the public teaching building, SYSU
- ◆ Revealed the relationship of classroom patterns with students' academic performance to put forward suggestions on classroom planning and students' choice of seats

### ***Case Study of *Daphniphyllum*, *Styrax Confuses* and *Corylopsis Sinensis* in Bamian Mountain***

Tropical and Subtropical Plants Resources Lab, SYSU

07-09.2015

Role: Chief Researcher; Supervisor: Prof. Wenbo Liao

- ◆ Researched on the biological community of Jinji Woods in Jiangxi Province and Bamian Mountain in Hunan Province; studied the plants evolution and climate change based on plants' growing conditions
- ◆ Designated 11 temporary quadrats including areas of 400m<sup>2</sup>, 600m<sup>2</sup>, 800m<sup>2</sup>, 1600m<sup>2</sup> and 3600m<sup>2</sup>; measured the categories, trunk width, height, crown diameter of all plants covered
- ◆ Selected the quadrat of 1600m<sup>2</sup> as final research sample; analyzed on species-area curve, species diversities, biomass, hierarchical structure and dynamic variation

### ***Investigation of Insect Diversity in Changbai Mountain***

Tropical and Subtropical Forest Ecosystem Experiment Center, SYSU

01-10.2015

Role: Chief Researcher; Supervisor: Associate Prof. Xubing Liu

- ◆ Used the sweeping method and light trap to successfully collect 1119 (45 families, 139 species) herbivorous insect examples and brought back to lab for study
- ◆ Adopted Excel and SPSS to calculate the specie richness and Shannnon-Wiener Diversity Index (H')
- ◆ Learned the relationship between insects and environment; better understood the host-specificity of herbivorous insects; put forth theoretic basis for the protection of insect diversity in this area

## **Practical Experience**

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### **Intern, Bao'an Hospital of Chinese Medicine, Shenzhen**

07-08.2017

- ◆ Recorded the situation about diabetes and hypertension for the elderly, vaccine injections for newly born babies, and epidemic diseases in the 5 affiliated community health service centers
- ◆ Examined the public health services mainly for the aged above 65 year-old, pregnant and newly born babies
- ◆ Offered assistance to government departments for the supervision and regulation of these health service centers

### **Key Member, The Interdisciplinary Contest in Modeling**

01.2017

- ◆ Established a model to assess whether a city meets smart growth with Analytic Hierarchy Process (AHP)
- ◆ Chose two cities (Sydney and Yantian in Shenzhen City) as experiment objects, and predicted their future development tendency; conducted sensitivity tests to judge its stability and validity
- ◆ Composed a thesis "A Model of Sustainable Smart Growth to Evaluate and Plan smart growth of a City", and won Honorable Mention

### **Team Leader, School of Life Sciences, SYSU**

04-10.2016

- ◆ Had a two-week field trip to Heishiding Nature Reserve and Daya Bay of Guangdong Province
- ◆ Learned to recognize more than 200 kinds of plants, made close observations and took careful notes
- ◆ Studied the characteristics and features of fish, birds, amphibians and reptiles

### **Vice President, Student Union, School of Life Sciences, SYSU**

05.2015-05.2016

- ◆ Was responsible for the basic operation and management of Academic Department and PR Department
- ◆ Organized many school activities as the people in charge, including "SUSY Cutting-edge Lecture", "Lab Tour", "Biology Festival", "Biology Experiment and Skills Contest", etc.
- ◆ Improved personal capacity, leadership, organizational skills, team spirits

## **Honors**

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- ◆ Champion in "Bio-Debate" Competition (College Level)
- ◆ First Prize in Freshman Debate Competition (University Level)
- ◆ First Prize in School Singing Contest (Member of School Chorus)
- ◆ "School Reading Star" Award (University Level)
- ◆ "Best Planner" in School Planning Contest (College Level)