Xinyi LIN

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Education

Columbia University | NY, US
Master of Science in Biostatistics 09.2018-Now
- GPA: 3.959
- Related Skills: C++, Python, STATA, MATLAB, R, Oracle, Linux
- Main Courses: Probability, Date Science, Biostatistical Methods, Topics in Advanced Statistical Computing

Sun Yat-sen University | Guangzhou, China
Bachelor of Science in Biological Science 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

Research

Data Imputation (In Progress)
SSTAR, Columbia University 06.2019-now
Practicum; Supervisor: Dr. Ying, Wei, Dr. Ivy, Chen
- Analyze data from Rakai Community Cohort Study (RCCS) which is about school enrollment and related factors including age, family size, orphanhood and so on
- Do multiple imputation for missing data, aim to find out factors which influence school enrollment

DNA Methylation (In Progress)
Wang's Lab, Mailman School of Public Health, Columbia University Irving Medical Center 06.2019-now
Practicum; Supervisor: Dr. Shuang, Wang
- Learn how to use paired t-test, Wilcoxon signed-rank test and related statistical methods to find out differentially methylated regions (DMRs) based on data from The Cancer Genome Atlas (TCGA) project
- Try to find out a better model for DMRs detection

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
- Built an analysis platform to study the allele-specific of m^6A, abnormity of which may result in critical illness
- Cooperated with a cancer center to collect large amount of data from cancer patients
- Used statistical and modeling methods together with massive data analysis to figure out whether m^6A is more likely to happen in certain alleles
- Predicted possible position of m^6A and provided 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
- Developed capacity of mathematical modeling, programming as well as data processing through plenty of case analyses mainly based on R and Python
- Conducted data pre-processing, cleansing and labeling before analysis procedure under the guidance of theories concerning statistics, programming and mathematics
- Made 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

- 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 (a software 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 $400m^2$, $600m^2$, $800m^2$, $1600m^2$ and $3600m^2$; measured the categories, trunk width, height, crown diameter of all plants covered
- Selected the quadrat of $1600m^2$ 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

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"

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