Jing Leng

No.2005, Songhu Road, Shanghai, China | +86-13220929029 | 20210700129@fudan.edu.cn

EDUCATION

Fudan University, Shanghai, China
September 2020 – June 2023 (*Expected*)
Master of Science in ***Bioinformatics***
Awards: Excellent Student Scholarship (2020-2021)

Fudan University, Shanghai, China
September 2016 – June 2020
Bachelor of Science in ***Biological Sciences***
Awards: Third-class Merit-based Scholarship for Undergraduate Students (2017-2018; 2018-2019)

PAPER

Analysis of functional differentiation of gene families in spatial transcriptome of mouse embryos.
Still in writing / The first author

Spatiotemporal atlas of organogenesis in development of orchid flowers
Molucular Plant / In reviewing / The second author

A recurrent SHANK1 mutation implicated in autism spectrum disorder causes autistic-like core behaviors in mice via downregulation of mGluR1-IP3R1-calcium signaling
Molecular Psychiatry / Has been received / Co-author

RESEARCH EXPERIENCE

Fudan University September 2021 – June 2023(expected)
***Researcher* under Qi Ji**
Project: Analysis of functional differentiation of gene families in spatial transcriptome of mouse embryos
In this study, we used the single-cell spatial transcriptome technique combined with own designed spatial dynamic programming method and clustering method based on both gene expression and space location. By integrating mouse embryo datasets at four stages with common data set, we are able to find functionally differentiated gene families , such as the HOX gene.

- Traditional spatial transtriptome data workflow: quality control; normalization; PCA/U-MAP/T-SNE dimensional reduction; own clustering method not yet published; find marker gene; cell type annotation; pseudotime and cell trajectory analysis; GO/KEGG analysis.
- Use own designed spatial dynamic programming method to identify spatially similar or differentially expressed gene families.
- Use Phylomcl and MCScanX combined with four stages' gene expression information to identify temporal differentially expressed gene families.

Fudan University September 2020 – March 2022
***Researcher* under Qi Ji**
Project: Spatiotemporal atlas of organogenesis in development of orchid flowers
In this study, We used spatial transcriptome technique combined with own designed clustering method based on both gene expression and space location and pseudotime analysis. Through innovative application of spatial transcription techniques in orchid flowers, We attempted to reconstruct a more convincing model of floral organ development.

- Traditional spatial transtriptome data workflow: Quality control; Normalization; PCA/U-MAP/T-SNE dimensional reduction; Own clustering method not yet published; Find marker gene; Cell type annotation; GO/KEGG analysis.

- We focused on genes involved in floral organ development and And observe their expression at different locations in different slices.
- Use Monocle3 to reconstruct flower development model and raise reasonable explanation by finding marker genes.

Fudan University September 2019 – December 2019
***Researcher* under Pro. Weidong Tian**
Project: Selecting the RNA Editing Sites in Gene Banks of Existing Species by Using Sprint
In this study, the sprint method independently developed by our lab was used to search for RNA editing sites in animals including rabbits, humans and chickens, which could identify RNA editing sites without consulting the SNP database of the species.
- Collected and extracted the RNA sequencing results of each species from online; processed the RNA sequencing results to detect the readable RNA editing sites by applying Sprint
- Compared the RNA editing sites detected with the RNA editing sites detected by using other methodologies like JACUSA and GIREMI
- Selected some RNA tandem repeats with repeatability higher than 3 for different species to avoid misidentification as editable SNP sites

Fudan University April 2019 – May 2019
***Researcher* under Pro. Cao Yang**
Project: Influence of Different Rest Patterns during Learning Intervals on Learning and Memory
The differences of spatial working memory capability before and after rest were measured to determine the relationship between different resting patterns and learning memory so that reasonable rest strategy during the learning intervals can be obtained to benefit students' study and life.
- Assisted the subjects to familiarize themselves with the three rest modes settled in the experiment; guided the subjects to rest in three modes for 5min respectively
- Conducted predictive tests and formal tests on the subjects before and after their rests respectively applying the pre-programmed E-Prime program
- Analyzed the accuracy of test questions before and after the break and the time taken to complete each multiple choice question

Fudan University September 2017 – June 2018
***Researcher* under Dr. Xiaohong Gong**
Project: Locating the Lesion Spot of Mentally Ill Person' Brain based on Analysis of Gene Sequences and Neuro-brain Imaging
In this study, our goal was to provide new clues for pathway research of mental illness through studying the neuro-brain images and the samples of gene sequences from the clinical patients and detecting the relationship between the lesion spots and genotypes of different mental diseases
- Applied Matlab program to analyze the brain image; detected the most concentrated lesion area
- Successfully located the possible regions of pathogenic genes through correlation analysis
- Searched the possible gene pathway based on the lesion areas located to provide guidance for future research

PROFESSIONAL EXPERIENCE

***Intern Researcher,* Tianmu Mountain Nature Reserve in Zhejiang Province** July 2018 – August 2018
- Studied designed parameters like appropriate proportion of raw materials, time and temperature of sealing plate; improved the load efficiency of the diagnostic kit
- Measured and recorded the self-pitch and perimeters of climbing plants in the Tianmu Mountain; analyzed the data and successfully obtained the possible reasons for plants' rotating in different directions

EXTRACURRICULAR ACTIVITIES

Volunteer, Jian Xin village, Fudan University September 2020 – June 2022
- Volunteered in Jian Xin village; deliver lecture about helping the elderly how to use smartphone; deliver lecture about helping the elderly identify pseudoscience.

Volunteer, Jiang Wan canteen, Fudan University September 2020 – June 2022

- Volunteered in Jiang Wan canteen; Maintain order; provide services and help to students.

Volunteer, Zujia Museum, Fudan University September 2018 – June 2019

- Volunteered in Zujia museum; guided and interpreted for the visitors; won the Excellent Volunteer Certificate

Member, T.F Cosplay Society, Fudan University September 2017 – January 2019

- Participated in the 20th Shanghai Comic Up competition and entered the final; prepared for and performed on major school events

Minister, Arts Division, Student Union, Fudan University February 2017 – July 2017

- Outreached for school activities; supported other departments in major activities; won the Excellent Cadre

SKILLS & INTERESTS

Computer: Linux, Python, R programming, Matlab, Blast, Mcscanx, Diamond, phylomcl, Microsoft Office, Mega, PowerLab Software, E-Prime, Image-J, SPSS

Technical: Single cell sequencing analysis, Gene family analysis, Spatial transcriptome analysis, ,Centrifuge, UV-VIS Spectrometer, Fluorescence Spectrometer, Fluorescence Microscope, PowerLab Hardware, Agarose Gel apparatus, Microbial RGB kit

Interests: Chess (National Level II), Badminton, Sketch, Watercolor (more than 6 years practice and training)