

YiFan Xiong

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Education

Fujian Agriculture and Forestry University | *Fuzhou, Fujian Province, CN*

Sep. 2019 - Jun. 2022

- M.S. in Bioengineering. GPA: 3.33/4.0
- Focus area on Functional genomics of plant.

Wuhan Institute of Bioengineering | *Wuhan, Hubei Province, CN*

Sep. 2015 - Jun. 2019

- B.S. in Bioengineering. GPA: 3.56/4.0
- Lab rotation experience in experimental and bioinformatic.

Work experience

Suzhou Dynamic Biosystems

Jun. 2023 - Present

Department of Bioinformatic, Bioinformatics Engineer

- Independently developed [cellPCT](#): An R package for single-cell percentage visualization

Fuzhou Institute of Data Technology

Jul. 2022 - Jun. 2023

Department of Digital Medicine, Bioinformatics Engineer

- hECA2.0 Single-cell database, public data collection and normalization

Research Experience

Undergraduate Research Assistant

Functional Bioactive Peptides Lab | Supervisor: Prof. Junlin Zhang

Sep. 2016 - Jun. 2017

Project 1: Extraction and identification of anti-cancer bioactive peptides from traditional Chinese medicine

- Experiments including DNA extraction, PCR, vector construction, protein extraction, SDS-PAGE and cell culture, *et al.*

Project 2: Functional verification of QinFeng tea by constructing Hyperuricemia animal models

- Construct mouse Hyperuricemia models by two protocols: High-purine diet and injection of uric acid metabolism enzymes inhibitors.
- Models evaluate by blood sample collection and quantitative analysis of uric acid using ELISA.
- Data process and visualization.

Plant Hormone and Nutrient Regulation Lab | Supervisor: Prof. Zhongming Fang

Jul. 2017 - Jun. 2019

Project 3: Altered Expression of *OsAAP3* Influences Rice Lesion Mimic and Leaf Senescence by Regulating Arginine Transport and Nitric Oxide Pathway (published)

- *OsAAP3* transgenic rice leaf tissue RNA-seq data analysis, including QC, mapping, count calling, DEGs identification and functional enrichment analysis.
- Paper writing and data visualization.

Graduate Student Researcher

Plant Functional genomics lab | Supervisor: Prof. Shoukai Lin

Jun. 2019 - Jul. 2022

Project 4: Genome-wide identification of the calcium-dependent protein kinase gene family in *Fragaria vesca* and expression analysis under different biotic stresses (published)

- Determined the evolutionary history of FvCDPKs by genome-wide identification and collinearity analysis.
- Retrieved strawberry abiotic stress transcriptome data from public database.

- Different transcriptional patterns of wild strawberry under various abiotic stresses(Bacteria, Fungi, Virus).

Project 5: Identification and Expression Analysis of CDPK Family in *Eriobotrya japonica*, reveals *EjCDPK25* in Response to Freezing Stress in Fruitlets(preprint)

- Identification of CDPK gene family in loquat, basic gene family analysis including gene structure, protein motif, collinearity analysis.
- Transcription patterns of EjCDPKs and target gene identification by freezing stress traits associated co-expression genes.
- Target gene over-expression Arabidopsis germline cultivation and freezing stress tolerance experiments.

Project 6: Large-scale Physiological and Transcriptome Analysis Insights into Adaptive Responses of *Eriobotrya japonica* Fruitlets to Freezing Stress(manuscript)

- Genome-wide identification of Loquat protein kinase using plant's kinase HMM models and finding expression patterns of freezing-stress related protein kinase.

Publications

- Wei Qilang, Zhenwei Yan, **Yifan Xiong**, and Zhongming Fang (2021). Altered Expression of OsAAP3 Influences Rice Lesion Mimic and Leaf Senescence by Regulating Arginine Transport and Nitric Oxide Pathway. *International Journal of Molecular Sciences*, 22, no.4: 2181. <https://doi.org/10.3390/ijms22042181>
- **Yifan Xiong**, Dahe Lin , Shiwei Ma, Chunhua Wang, Shoukai Lin (2022). Genome-wide identification of the calcium-dependent protein kinase gene family in fragaria vesca and expression analysis under different biotic stresses. *European Journal of Plant Pathology*. 164(2):283-98. <https://doi.org/10.1007/s10658-022-02560-4>
- **Yifan Xiong**, Shunquan Lin, Jincheng Wu, Shoukai Lin (2024). Identification and Expression Analysis of CDPK Family in *Eriobotrya japonica*, reveals *EjCDPK25* in Response to Freezing Stress in Fruitlets. *bioRxiv*. <https://doi.org/10.1101/2024.05.01.591999>

Research Skills

Bioinformatic skills

- Programming languages: R, Python and Shell
- NGS data analysis: WGS, WES, scRNA-seq, bulk RNA-seq(miRNA, lncRNA, circRNA), WGBS, ChIP-seq, ATAC-seq
- Workflow Management: WDL, Snakemake
- Code Management and Version Control: Github and Gitlab
- Servers and Environment Manager: Conda, Docker, Slurm

Other skills

- Vector construction, Real-time PCR, SDS-PAGE, Cell line cultivation, plant over-expression material construction
- Thesis writing and data visualization
- Oral presentation and poster presentations
- Independent thinking ,problem-solving, Team working and communication
- English competency: IETLS 7.0 (Listening 7.5, Reading 8.5, Writing 6.0, Speaking 6.5)

Academic activities

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| The 10th National Symposium on Loquat <i>Lanxi, Zhejiang province</i> | May. 2021 |
| <ul style="list-style-type: none">• Submit an abstract on the topic of <i>Identification calcium sensors in loquat</i> | |
| Academic poster competition for Graduate Student <i>Fujian Agriculture and Forestry University</i> | May. 2022 |
| <ul style="list-style-type: none">• Oral and poster presentation on the topic of my graduate thesis | |
| Digital Medicine Algorithm Innovation Competition <i>Fuzhou, Fujian province</i> | Aug. 2022 |
| <ul style="list-style-type: none">• Organization assistant | |
| The Second Symposium of Fujian Bioinformation Society <i>Fuzhou, Fujian province</i> | Feb. 2023 |
| <ul style="list-style-type: none">• Poster presentation | |

Honors & Awards

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| Scholarship for Undergraduates 3rd Place <i>Wuhan Institute of Bioengineering</i> | Dec. 2015 |
| Annual Outstanding Undergraduates <i>Wuhan Institute of Bioengineering</i> | Dec. 2016 |
| National Undergraduates' English Competition 3rd Place <i>Wuhan Institute of Bioengineering</i> | May. 2017 |
| Scholarship for Undergraduates 2nd Place <i>Wuhan Institute of Bioengineering</i> | Dec. 2017 |
| Scholarship for Undergraduates 1st Place <i>Wuhan Institute of Bioengineering</i> | Dec. 2018 |
| Outstanding Graduates <i>Wuhan Institute of Bioengineering</i> | Jun. 2019 |
| Scholarship for Graduates <i>Fujian Agriculture and Forestry University</i> | Jun. 2020 |
| Academic Achievements Prize for Graduates <i>Fujian Agriculture and Forestry University</i> | Jun. 2022 |