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 visulization

Fuzhou Institue of Data Technology **Jul. 2022 - Jun. 2023**

Department of Digital Medicine, Bioinformatics Engineer

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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 qutitive analsis of uric acid using ELISA.
- Data process and visulization.

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 writting and data visulization.

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 strawbarry abiotic stress transciptome 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 writting and data visulization
- Oral presentaion 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)

Acdemic activates

The 10th National Symposium on Loquat | *Lanxi, Zhejiang province* **May. 2021**

- Submit an abstract

Academic poster competition for Graduate Student | *Fujian Agriculture and Forestry University* **May. 2022**

- Oral and poster presentation on the topic of my gradute thesis

Digital Medicine Algorithm Innovation Competition | *Fuzhou, Fujian province* **Aug. 2022**

- Organization assistant

The Second Symposium of Fujian Bioinformation Society | *Fuzhou, Fujian province* **Feb. 2023**

- Poster presentation

Honors & Awards

Scholarship for Undergraduates 3rd Place | *Wuhan Institute of Bioengineering* **Dec. 2015**

Annual Outstanding Undergraduates | *Wuhan Institute of Bioengineering* **Dec. 2016**

National Undergraduates' English Competition 3rd Place | *Wuhan Institute of Bioengineering* **May. 2017**

Scholarship for Undergraduates 2nd Place | *Wuhan Institute of Bioengineering* **Dec. 2017**

Scholarship for Undergraduates 1st Place | *Wuhan Institute of Bioengineering* **Dec. 2018**

Outstanding Graduates | *Wuhan Institute of Bioengineering* **Jun. 2019**

Scholarship for Graduates | *Fujian Agriculture and Forestry University* **Jun. 2020**

Academic Achievements Prize for Graduates | *Fujian Agriculture and Forestry University* **Jun. 2022**