

Yifan Xiong

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Education

Fujian Agriculture and Forestry University <i>M.S. in Bioengineering</i>	Sep. 2019 - Jun. 2022
Wuhan University of Bioengineering <i>B.S. in Bioengineering</i>	Sep. 2015 - Jun. 2019

Professional Experience

Bioinformatics Engineer <i>Dynamic Biosystems Ltd, Xiamen, China</i> <ul style="list-style-type: none">Development team member of the Well-Paired-Seq single-cell platform; independently developed the R package cellPCT.	Jun. 2023 - Jun. 2024
Bioinformatics Engineer <i>Fuzhou Institute of Data Technologies, Fuzhou, China</i> <ul style="list-style-type: none">Annotated cell types and organized metadata for the hECA 2.0 database; constructed multi-omics pipelines.	Jul. 2022 - Jun. 2023

Research Experience

Bioinformatics Research Assistant <i>XGlab, Tsinghua University, PI: Prof. Xuegong Zhang</i>	Jul. 2024 - Present
Evaluate the Biological Meaning in Different Gene Embeddings from Single-cell Foundation Models <ul style="list-style-type: none">Dimensionality reduction and visualization of gene embeddings, evaluate gene pairs' distance in embedding space.	
Reversing T cell Exhaustion through TFs Combinations Identified by the scDirect Algorithm <ul style="list-style-type: none">Annotated T cell subclusters in scRNA-seq datasets and deduced TF combinations for reversing exhausted T cells.	
Reveal the Potential Role of lncRNA Targets in the Pathogenesis of Marfan Syndrome <ul style="list-style-type: none">Conducted co-expression analysis of lncRNA and mRNA to identify potential lncRNAs involved in Marfan syndrome.	
Graduate Student Researcher <i>Department of Life Science, Fujian Agriculture and Forestry University, PI: Prof. Shoukai Lin</i>	Jun. 2019 - Jul. 2022
Identify Calcium-dependent Protein Kinase in <i>Fragaria vesca</i> and Reveal the Expression Patterns Under Biotic Stresses <ul style="list-style-type: none">Conducted phylogenetic analysis of CDPK family in strawberry, and determined the stress-related cis-regulatory elements.Performed transcriptome analysis of different pathogen infections to reveal the distinctive functional responses.	
Large-scale Physiological and Transcriptome Analysis of Adaptive Responses of Loquat fruit Under Freezing Stress <ul style="list-style-type: none">Conducted genome-wide identification of protein kinase and TFs using motif HMM models and sequence similarity.Associated freezing stress traits with co-expressed gene modules to identify hub genes in gene regulation networks.Experimental verification of target genes in <i>Arabidopsis</i>, revealing their functions in freezing stress resistance.	
Undergraduate Research Assistant <i>Applied Biotechnology Research Center, Wuhan University of Bioengineering, PI: Prof. Junlin Zhang & Prof. Zhongming Fang</i>	Sep. 2016 - Jun. 2019
Extraction and Identification of Anti-cancer Bioactive Peptides and Functional Verification <ul style="list-style-type: none">Received training including vector construction, QPCR, SDS-PAGE, cell culture and animal model establishment.	
Transcriptome Analysis of Rice Transgenic Materials Reveal Mechanisms of Leaf Senescence <ul style="list-style-type: none">Analyzed RNA-seq data from <i>OsAAP3</i> transgenic rice leaf, conducted data visualization and wrote manuscript.	
RNA-seq Analysis Provides Insights into the Regulatory Mechanism of Striped Leaf Abinism in Arecanut <ul style="list-style-type: none">Performed <i>De novo</i> transcriptome analysis of arecanut leaves, determining the expression patterns of genes related to pigments biosynthesis, senescence and chloroplast development.	

Publications and Preprints

- **Yifan Xiong**, Shunquan Lin, Jincheng Wu, Shoukai Lin. Identification and Expression Analysis of CDPK Family in *Eriobotrya japonica*, reveals *EjCDPK25* in Response to Freezing Stress in Fruitlets. *bioRxiv*, 2024.
<https://doi.org/10.1101/2024.05.01.591999>
- **Yifan Xiong**, Dahe Lin, Shiwei Ma, Chunhua Wang, Shoukai Lin. 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*, 2022, 164(2):283-98. <https://doi.org/10.1007/s10658-022-02560-4>
- Wei Qilang#, Zhenwei Yan#, **Yifan Xiong**, and Zhongming Fang. Altered expression of *OsAAP3* influences rice lesion mimic and leaf senescence by regulating arginine transport and nitric oxide pathway. *International Journal of Molecular Sciences*, 2021, 22, no.4: 2181. <https://doi.org/10.3390/ijms22042181>
- Jia Li, Xiaocheng Jia, Liyun Liu, Xianmei Cao, **Yifan Xiong**, Yaodong Yang, Huanqi Zhou, Ming Yi, and Meng Li. Comparative biochemical and transcriptome analysis provides insights into the regulatory mechanism of striped leaf albinism in arecanut (*Areca catechu* L.). *Industrial Crops and Products*, 2020, 154: 112734.
<https://doi.org/10.1016/j.indcrop.2020.112734>

Skills

- Language: IELTS overall band 7 (Reading 8.5, Listening 7.5, speaking 6.5, writing 6.0); native in Mandarin Chinese.
- Programming: Proficient in R, Python and Shell
- NGS Data Analysis: scRNA-seq, bulk RNA-seq, WGS, WGBS, ATAC-seq
- Code Management and Version Control: Github and Gitlab
- Servers, Environment and Workflow Manager: Slurm, Conda, Docker, WDL and Snakemake

Presentations and Posters

The 2nd Symposium of Fujian Bioinformatics Society Poster presentation Fuzhou, Fujian province	Feb. 2023
Academic Competition for Graduate Student Oral and poster presentation Fuzhou, Fujian province	May. 2022
The 10th National Symposium on Loquat Poster presentation Lanxi, Zhejiang province	May. 2021

Honors & Awards

Employee of the Year Award Dynamic Biosystems Ltd.	Dec. 2023
Academic Achievements Prize for Graduates Fujian Agriculture and Forestry University	Jun. 2022
Scholarship for Graduates Fujian Agriculture and Forestry University	Jun. 2020
Outstanding Graduates Wuhan University of Bioengineering	Jun. 2019
1st Place Scholarship for Undergraduates Wuhan University of Bioengineering	Dec. 2018
2nd Place Scholarship for Undergraduates Wuhan University of Bioengineering	Dec. 2017
3rd Place National English Competition for Undergraduates Wuhan University of Bioengineering	May. 2017
Annual Outstanding Undergraduates Award Wuhan University of Bioengineering	Dec. 2016
3rd Place Scholarship for Undergraduates Wuhan University of Bioengineering	Dec. 2015

Outreach and Service Activities

Organizational support volunteer for the Inauguration of ISCB-China	Oct. 2024
Organizational support volunteer for Digital China Innovation Competition in Medicine Algorithm	Aug. 2022
Community support volunteer for Anti-COVID pandemic	Jun. 2020