

# Yifan Xiong

✉ [ewanxiong@gmail.com](mailto:ewanxiong@gmail.com)  [Github](#)  [Homepage](#)

## 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

<b>Bioinformatics engineer</b>   <i>Dynamic Biosystems Ltd, Xiamen, China</i>	Jun. 2023 - Jun. 2024
<ul style="list-style-type: none"><li>Member of the development team for the Well-Paired-Seq single-cell platform; Independently developed R pkg cellPCT.</li></ul>	
<b>Bioinformatics engineer</b>   <i>Tsinghua-Fuzhou Institute of Data Technologies, Fuzhou, China</i>	Jul. 2022 - Jun. 2023
<ul style="list-style-type: none"><li>Metadata organization, cell type annotation and import into hECA2.0 Single-cell Atlas; Construct Multi-omics pipelines.</li></ul>	

## Research Experience

<b>Bioinformatics Research Assistant</b>	Jul. 2024 - Present
<i>Department of Automation, Tsinghua University, PI: Prof. Xuegong Zhang</i>	
<b>Evaluate the biological meaning in different single cell foundation models and LLM's gene embedding</b>	
<ul style="list-style-type: none"><li>Extract gene embedding from different models, evaluate the biological meaning by unsupervised methods.</li></ul>	
<b>Reversing T cell exhaustion through TF combinations identified by scDirect algorithm</b>	
<ul style="list-style-type: none"><li>Annotate T cell subclusters in scRNA-seq datasets and deduce TF combinations for reversing exhausted T cells.</li></ul>	
<b>LncRNA and ceRNA analysis of Marfan syndrome reveal the potential role of lncRNA in the pathogenesis</b>	
<ul style="list-style-type: none"><li>Co-expression analysis of lncRNA and mRNA identifies potential pathogenesis ncRNAs involved in MF syndrome.</li></ul>	
<b>Graduate Student Researcher</b>	Jun. 2019 - Jul. 2022
<i>Department of Life Science, Fujian Agriculture and Forestry University, PI: Prof. Shoukai Lin</i>	
<b>Identify Calcium-dependent protein kinase family in <i>Fragaria vesca</i> and reveal their expression patterns under biotic stresses</b>	
<ul style="list-style-type: none"><li>Phylogenetic analysis of CDPK family in strawberry, and determine the stress-related Cis-regulatory elements.</li><li>Conduct transcriptome analysis of different pathogen infections to reveal the distinctive functional responses.</li></ul>	
<b>Large-scale physiological and transcriptome analysis of adaptive responses of <i>Eriobotrya japonica</i> under freezing stress</b>	
<ul style="list-style-type: none"><li>Genome-wide identification of Loquat protein kinase and TFs using motif specific HMM models and sequence similarity.</li><li>Associate the freezing-stress traits with co-expressed gene modules, find the hub genes in gene regulation networks.</li><li>Experimental verification of target genes in <i>Arabidopsis</i>, revealing the function of freezing stress resistance.</li></ul>	
<b>Undergraduate Research Assistant</b>	Sep. 2016 - Jun. 2019
<i>Applied Biotechnology Research Center, Wuhan University of Bioengineering, PI: Prof. Junlin Zhang &amp; Prof. Zhongming Fang</i>	
<b>Extraction and identification of anti-cancer bioactive peptides and <i>in vitro</i> functional verification</b>	
<ul style="list-style-type: none"><li>Wet-lab training including vector construction, QPCR, SDS-PAGE, cell culture, animal model establishment.</li></ul>	
<b>Transcriptome analysis of <i>Oryza sativa</i> transgenic materials reveal mechanism of leaf senescence</b>	
<ul style="list-style-type: none"><li><i>OsAAP3</i> transgenic rice leaf tissue RNA-seq data analysis, conduct data visualization, and respond to peer reviews.</li></ul>	
<b>RNA-seq analysis provides insights into the regulatory mechanism of striped leaf albinism in <i>Areca catechu</i></b>	
<ul style="list-style-type: none"><li><i>De novo</i> transcriptome analysis of arecanut leaf, determine the expression patterns of genes related to pigments biosynthesis, senescence and chloroplast development.</li></ul>	

## Publications

- **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 mandrain Chinese.
- Programming: Proficient in R, Python and Shell
- NGS data analysis: scRNA-seq, bulk RNA-seq(ceRNA competition),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 Bioinformation Society   Poster presentation   <i>Fuzhou, Fujian province</i>	Feb. 2023
Digital Medicine Algorithm Innovation Competition   Organization assistant   <i>Fuzhou, Fujian province</i>	Aug. 2022
Academic competition for Graduate Student   Oral and poster presentation   <i>Fuzhou, Fujian province</i>	May. 2022
The 10th National Symposium on Loquat   Poster presentation   <i>Lanxi, Zhejiang province</i>	May. 2021

## Honors & Awards

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

## Outreach and Extracurricular Activities

Community volunteer for anti-COVID pandemic	Jun. 2020
Bilingual volunteer for the Tour of China Cycling Competition	May. 2016
Pre-College Summer School Program @Central Chnia Normal University	Jul. 2015 - Aug. 2015