Cong **Feng**

BIOINFORMATICS ENGINEER · POPULATION GENETICS

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"Be the change that you want to see in the world."

Summary

As a **Bioinformatics Engineer/Assistant Researcher** at the Agricultural Genomics Institute, Chinese Academy of Agricultural Sciences for 6 years, I've immersed myself in the realms of genomics and population genetics. My pivotal roles have spanned from the development of bioinformatics tools, conducting population genetic analyses on wheat/pea, to gene mining. My contributions have been recognized in esteemed international journals, including *Nature*.

Proficient in crafting bioinformatics analysis tools, workflows, and setting up specialized websites. Love to contribute to open sources and tech communities by sharing knowledge and experience. I have an innate interest in devising innovative problem-solving methodologies for intricate tasks and am always on the hunt to learn and implement new technologies and tools.

Work Experience

Agricultural Genomics Institute, Chinese Academy of Agricultural Sciences   *Shenzhen, China*

BIOINFORMATICS ENGINEER & ASSISTANT RESEARCHER   *Jul. 2019 - Present*

- **Watkins & Worldwide Wheat G2B Project** (Published in *Nature*)
- Led SNP calling, structural variant detection, and CNV identification for 1051 Watkins collection samples.
- Conducted comprehensive population structure analyses on large-scale wheat datasets.
- Developed novel LD-based haplotype matrix construction workflow.
- Created NAM imputation and NAM-GWAS methodologies for genomic analysis.
- Designed TagSNPs representing Watkins collection based on haplotype matrix and population diversity.
- Developed the Global Grain Genomics Research Program portal (`https://g3rp.com`).
- Created HAPPE (`https://github.com/fengcong3/HAPPE`) for visualizing population haplotype data in Excel.
- Contributed to WWWG2B website (`https://wwwg2b.com`) development.
- Helped develop interactive Manhattan plot visualization tool for GWAS analysis.

- **Mendel Pea G2P Project** (Published in *Nature*)
- Identified and conducted haplotype analysis for 4 genes of 3 previously undecoded traits (pod color, pod shape, flower position).
- Performed novel haplotype analysis for 4 cloned genes (seed shape, cotyledon color, plant height, flower color).
- Led transcriptome, methylation, and RT-PCR analyses for gene decoding process.
- Contributed to MendelPeaG2P website (`https://mendelpea.com`) development.

BGI Group   *Shenzhen, China*

BIOINFORMATICS ENGINEER INTERN   *Jun. 2018 - Aug. 2018*

- Mastered de novo genome assembly techniques and successfully assembled the genomes of *Lycium ruthenicum* and *Lycium barbarum*, contributing to medicinal plant genomic research.
- Developed key components of a computational pipeline for identifying and characterizing cysteine-rich peptides with potential pharmaceutical applications.

Publications

Genomic and Genetic Insights into Mendel's Pea Genes.   *Nature*

CONG FENG, BAIZHI CHEN, JULIE HOFER, YAN SHI, MEI JIANG, BO SONG, HONG CHENG, ET AL.   *2025*

DOI: 10.1038/s41586-025-08891-6

Harnessing Landrace Diversity Empowers Wheat Breeding.   *Nature*

SHIFENG CHENG, **CONG FENG**, LUZIE U. WINGEN, HONG CHENG, ANDREW B. RICHE, MEI JIANG, MICHELLE   *2024*
LEVERINGTON-WAITE, ET AL.

Volume 632, No. 8026, Pages 823–31. DOI: 10.1038/s41586-024-07682-9

Septoria Tritici Blotch Resistance Gene Stb15 Encodes a Lectin Receptor-like Kinase. *Nature Plants*

AMBER N. HAFEEZ, LAETITIA CHARTRAIN, **CONG FENG**, FLORENCE CAMBON, MARTHA CLARKE, SIMON GRIFFITHS, SADIYE   *2025*
HAYTA, ET AL.

Volume 11, No. 3, Pages 410–20. DOI: 10.1038/s41477-025-01920-2

HAPPE: A Tool for Population Haplotype Analysis and Visualization in Editable Excel Tables.

Cong Feng, Xingwei Wang, Shishi Wu, Weidong Ning, Bo Song, Jianbin Yan, and Shifeng Cheng.

Honors & Awards

Provincial & City Awards

2018   **Finalist**, Microsoft "Imagine Cup" Code with Purpose Chongqing Final

University Awards

2018   **First Prize**, Chongqing Medical University "Entrepreneurship Competition"

Faculty & Departmental Awards

2017   **Outstanding Student**
2016   **Outstanding Student Cadre**
2016   **Third Prize**, Basic Medical College "Ying Yao Plan" Research Project

Education

College of Basic Medical Sciences, Chongqing Medical University

Chongqing, China

B.S. in Bioinformatics

Sept. 2015 - Jul. 2019

- Served as an External Relations Officer in the Student Union for 1 year.
- Held the position of Discipline Inspection Department Head in the Student Union for 1 year.