Weidong Wu

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Summary

I am a responsible, passionate, and self-motivated student seeking admission to a PhD programme. My primary research interests revolve around **Computational Biology** and **Deep Learning for Life Science**. I possess an **interdisciplinary background** in software engineering and bio-medicine, which enables me to approach problems from multiple perspectives and contribute innovative solutions in between traditional disciplines. With my strong dedication to research and a genuine drive to make meaningful advancements in health AI innovation, I am eager to embark on a PhD journey and contribute to the intersection of biomedical engineering, computational biology, and deep learning. More information can be found at wvdon.github.io.

Education

Zhengzhou University *Henan, China*
M.S. in Biology and Medicine *Sep. 2021 – Jun. 2024(exp)*

Zhengzhou University *Henan, China*
B.S. in Software Engineering *Sep. 2017 – Jun. 2021*

Projects

De novo design of DNA binding proteins learn from bacterial chromosome segregation system. *2023-Present*

- *M.S. thesis*.
- Mining the public bacteria genome (Sum:84768), and the rules of co-evolution between DNA regulatory element and its cognate DNA binding proteins.
- De novo protein design with restricted DNA sequence specificity, for the purpose of site specific chromatin remodeling in eukaryotic genome.

ATAC-seq and RNA-seq analysis in primary human Gastric Intestinal Metaplasia (*More details*). *2022*

- *Responsible for bioinformatics analysis.*
- I discovered potential genes such as NKX6-3, HNF4A-AS1 of epigenetic changes leading to gastric metaplasia.
- In addition, the β-catenin(the Wnt signaling pathway in which NKX6-3), CDX2, and AP-1 binding complex, enhance ALPP transcription, which in turn affects *Intestinal Metaplasia*. This hypothesis is currently in the validation phase and will be published.

Dynamic credit assessment system for enterprises in Henan Province based on big data. *2019*

- *Project Leader of the student*.
- Combined with the polarity analysis of enterprise news by BERT, a credit evaluation model is established and a web platform integrating query, display, and credit evaluation is designed based on Java development.

Publication

Si, Y[$]., **Wu, W[$]**., Xue, X., Zhuo, Z., Mi , Y., Zheng, P. The evolution of SARS-CoV-2 and the COVID-19 pandemic. **PeerJ 2023**, Co-first author, DOI: https://doi.org/10.7717/peerj.15990.

Wu, W., Y. Wang, S. Xu., K. Yan. SFNN: Semantic Features Fusion Neural Network for Multimodal Sentiment Analysis. **CACRE 2020**, DOI: https://doi.org/10.1109/CACRE50138.2020.9230015

Ye, S., Li, C., Zhao, R., **Wu, W.** NOAA-LSTM: A New Method of Dialect Identification. In International Conference on Artificial Intelligence and Security. **ICAIS 2019**, DOI: https://doi.org/10.1007/978-3-030-24274-9_2

Wu, W[$]., Liu, B[$]., Zhang, Qing., Zhang, X., Miao, J., Xue, X., Feng, P. Meta-analysis of Vector-based Immunotherapy for Multi-Cancer. **Frontiers in Immunology**. *Independent review*.

Liu, B[$]., **Wu, W[$].**, Xue, X., Mi, Y., Zheng, P. Senescence related genome-wide Mendelian randomization identifies putatively causal genes for multiple cancer types. *To be submitted*

Experience

Zhengzhou Digital Technology Co., Ltd *Mar 2021 – Otc 2021*

- *Backend development engineer intern*.
- Solo development backend for reporting *Nucleic Acid Tes*t data in hospitals; participated in the construction of the '*731 Zhengzhou Nucleic Acid Test*' data platform, with a data volume of 50 million**.**

Computer Club of Zhengzhou University *Sep 2018 – Jun 2019*

- *President*.
- Served as president of the association and organized many computer clinics and knowledge seminars.

Certifications

- Second place in the multimodal emotion recognition track of the 'KDDI' AI algorithm competition (Rank:2/456).
- China University Computer Challenge "Network Technology Challenge", Second Prize in Central China Region.
- ACM Programming Competition, Zhengzhou University, First Prize.
- "Challenge Cup" National Competition of Extracurricular Academic Science and Technology Works for University Students, First Prize in Henan Province.
- Zhengzhou University SmartTrack Challenge, Second Prize.
- Zhengzhou University Youth APP Design, Second Prize.
- Li, C., Li, H., Wang, Y., **Wu, W**., et al. Multimodal driver emotion-assisted regulation method, CN202010157896.
- **Wu, W.**, et al. Speech Recognition System, Software copyright, 2019SR1187334
- "Coretronic Cup" Future Car Human-Machine Interaction Design Competition, 7th (Top 0.1%).
- Zhengzhou University Postgraduate, First Class Academic Scholarship.

Skills

Languages	:	Python, Java, R.
Frameworks	:	Pytorch, Flask, Spring Boot.
Libraries	:	Sklearn, Pandas, BioPython, Matplotlib.
Others	:	Linux, ATAC-seq, RNA-seq, Sql.