Wenfeng Feng

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Experience

2022–Present **Professor**, School of Computer Sci. and Tech., Henan Polytechnic University
- Research and implement deep neural networks to analyze huge volumes of multi-modal data to identify patten and make predication.
- Develop AI application using Python-based deep learning frameworks such as Pytorch and Jax, Python-based data analysis tools such as NumPy, Pandas, Matplotlib

2016–2022 **Deputy Director**, Information Management Center, Henan Polytechnic University
- Provided a wide range of computing support, resources and services for the campus, including networks, cloud computing platform, business systems, information security, etc.
- Designed the campus software platform using Python-based Web framework FastAPI, and Vue framework

2015–2016 **Postdoctoral Researcher**, School of Geography and the Environment, University of Oxford
- Proposed a theoretical framework to explore the built-in mechanisms of critical transitions and stability for mutualistic ecological systems.
- Developed a R package *StabEco* to explore the deterministic and stochastic dynamics of ecological systems.

2013–2015 **Postdoctoral Researcher**, Dept. of Biosci. and Bioinfo., Kyushu Institute of Technology
- Proposed a method based on spectral graph theory to estimate the dominant eigenvalue of quantitative bipartite networks
- Proved that the heterogeneity of node degrees and link weights primarily determines the local stability of mutualistic ecological communities.

2008–2013 **Associate Professor**, Dept. of Computer Sci. and Tech., Henan Polytechnic University
- Teaching courses: Computer Network Architecture, Java Programming, Distributed Systems
- Developed a SOFM neural network algorithm to estimate construction cost.

2006–2008 **Postdoctoral Researcher**, Dept. of Electronic Engineering, Tsinghua University
- Proposed a P2P traffic identification method using machine learning algorithm.
- Implemented a SIP-based P2P video streaming software (Copyright No. 2008SRBJ3221).

1996–2000 **Software Development Engineer**, Henan Branch of China Construction Bank
- Managed the core operating system and the DB2 database of the bank
- Developed bank applications using ESQL/C and COBOL

Education

2003–2006 **Ph.D.**, in Computer Science, Beijing Institute of Technology, China
Thesis: Sketch Data Structures and Algorithms and their Applications in Real-time Network Data Stream Mining

2000–2003 **M.S.**, in Computer Software and Theory, Beijing Institute of Technology, China

1992–1996 **B.E.**, in Computer Applied Technology, North China University of Technology, China

Funding

2012–2014 Program for New Century Excellent Talents in University of China (no. NCET-11-0942)

2008–2010 Program of National Natural Science Foundation of China (no. 60703053)

Publications

1 **Wenfeng Feng**, Xin Zhang and Qiushuang Song. Lightweight Isotropic Convolutional Neural Network for Plant Disease Identification. *in Agronomy 2023*, 13, 1849. **SCIE**

2 **Wenfeng Feng**, Xin Zhang and Qiushuang Song. Incoherence of deep isotropic neural networks increase their performance on image classification. *in Electronics 2022*, 11, 3603. **SCIE**

3 **Wenfeng Feng** and Richard Bailey. Unifying relationships between complexity and stability in mutualistic ecological communities. *Journal of Theoretical Biology*, 2018, 439: 100-126. **SCIE**

4 **Wenfeng Feng** and Kazuhiro Takemoto. Heterogeneity in ecological mutualistic networks dominantly determines community stability. *Scientific Reports*, 4:5912, August 2014. **SCIE**

5 Kazuhiro Takemoto, Saori Kanamaru, and **Wenfeng Feng**. Climatic seasonality may affect ecological network structure: Food webs and mutualistic networks. *Biosystems*, 121:29–37, July 2014. **SCIE**

6 **Wenfeng Feng** and Wenjuan Zhu. Application of genetic algorithm and neural network in construction cost estimate. *Advanced Materials Research*, 756:3194–3198, 2013.

7 **Wenfeng Feng** and WenJuan Zhu. The application of sofm fuzzy neural network in project cost estimate. *Journal of Software*, 6(8):1452–1459, 2011.

8 Zhibin Zhang, **Wenfeng Feng**, and Yongfeng Huang. Gossip-based adaptive membership management protocol. *Journal of Computer Applications*, 11:019, 2009. (in Chinese)

9 **Wenfeng Feng**, Yongfeng Huang and Xing Li. Reversible sketch data structure. *Journal of Tsinghua University*, 48(10):1625–1628, 2008. (in Chinese)

10 Hui Liu, **Wenfeng Feng**, Yongfeng Huang, and Xing Li. A peer-to-peer traffic identification method using machine learning. In *Networking, International Conference on Architecture, and Storage. NAS'07.*, 155–160. IEEE, 2007.

11 **Wenfeng Feng**, Qiao Guo, Li Wang, and Fengcheng Liu. Network traffic analysis system based on multidimensional data model. *Computer Engineering*, 3:043, 2006. (in Chinese)

12 **Wenfeng Feng**, Qiao Guo, and Suyan Wu. Finding frequent items of data streams based on hierarchical sketch. *Transactions of Beijing Institute of Technology*, 6:011, 2006. (in Chinese)

Projects

2002–2003 Customer analysis system, Shanxi branch of China Construction Bank. Tech: DataStage ETL / RedBrick DW / SQL / JSP

2003–2004 Decision support system for freight marketing, Ministry of Railways, China. Tech: SAS DM/PM

2014-2016 Structure and dynamics of mutualistic ecological networks. Tech: R language. Homepage: https://github.com/keepsimpler/ecological-network

2017-2020 Smart campus information system, Henan Polytechnic University. Tech: FastAPI / Vue. Homepage: https://zhlg.hpu.edu.cn/

2020-2021 Relation between Neural Networks and Complex Networks. Tech: Python / Pytorch. Homepage: https://github.com/keepsimpler/zero

2021-2022 Disease identification in smart farming. Tech: Python / Pytorch/ Pandas / Jupyter Notebook / Robot Operating System (ROS2) / Mkdocs. Homepage: https://keepsimpler.github.io/mkdocs/

2021-2022 Banking application serving e-commerce merchants. Tech: Python / FastAPI. Homepage: https://github.com/keepsimpler/fastapi

Skills

AI and Data Science: Proficient in R, SQL, Python-based deep learning frameworks such as Pytorch and Jax, Python-based data analysis tools such as NumPy, Pandas, Matplotlib, etc.

Programming: Proficient in Python and Python-based Web development framework such as FastAPI and Django.

Knowledge management: Conversant in using Zotero, logseq, etc. to manage, organize, track documents and create new ideas.

Languages: Chinese: Native Speaker; English: Business Level; Japanese: Entry Level.