Feng Yu

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Education

Ph.D in Computer Science, University of Exeter, UK. Sep 2023 – Present
Research interests: Federated Learning, Continual Learning and Edge Intelligence.
Supervisor: *Prof. Jia Hu* and *Prof. Geyong Min*.

M.Eng in Cyberspace Security, Fujian Normal University, China. Sep 2020 – Jun 2023
Research interests: Federated Learning, Edge Computing and Privacy Protection. GPA: 87.88/100
Supervisor: Prof. *Hui Lin* and Prof. *Xiaoding Wang*.

B.Eng in Computer Science and Technology, Hunan University of Science and Technology, China. Sep 2016 – Jun 2020
Thesis: Application of recommendation algorithm based on RL (**Outstanding**). GPA: 3.34/4.0
Advisor: Prof. *Qiongbin Zhang*.

Publications

[1] **Feng Yu**, Hui Lin, Xiaoding Wang, Sahil Garg, Georges Kaddoum, Satinder Singh, and Mohammad Mehedi Hassan. "Communication-Efficient Personalized Federated Meta-Learning in Edge Networks". In: *IEEE Transactions on Network and Service Management* 20.2 (June 2023), pp. 1558–1571. DOI: 10.1109/TNSM.2023.3263831.

[2] **Feng Yu**, Hui Lin, Xiaoding Wang, Abdussalam Yassine, and M. Shamim Hossain. "Blockchain-Empowered Secure Federated Learning System: Architecture and Applications". In: *Computer Communications* 196 (Dec. 2022), pp. 55–65. DOI: 10.1016/j.comcom.2022.09.008.

[3] **Feng Yu**, Qingxin Lin, Hui Lin, and Xiaoding Wang. "Privacy-enhanced federated learning scheme based on generative adversarial networks". In: *Chinese Journal of Network and Information Security* 9.3 (June 2023), pp. 113–122. DOI: 10.11959/j.issn.2096-109x.2023043.

[4] Jianmin Liu, Xiaoding Wang, Hui Lin, and **Feng Yu**. "GSAA: A Novel Graph Spatiotemporal Attention Algorithm for Smart City Traffic Prediction". In: *ACM Transactions on Sensor Networks* (Nov. 2023). DOI: 10.1145/3631608.

[5] Ankita Sharma, Shalli Rani, Syed Hassan Shah, Rohit Sharma, **Feng Yu**, and Mohammad Mehedi Hassan. "An Efficient Hybrid Deep Learning Model for Denial of Service Detection in Cyber Physical Systems". In: *IEEE Transactions on Network Science and Engineering* 10.5 (Sept. 2023), pp. 2419–2428. DOI: 10.1109/TNSE.2023.3273301.

Preprint & Ongoing

[1] **Feng Yu** *et al.*, "FCIL with fine-tuning", to be submitted.

[2] Zi Wang, Fei Wu, **Feng Yu**, Yurui Zhou, Jia Hu, and Geyong Min. "FCL Survey", to be submitted.

Patents and Software

[3] **Feng Yu**, Hui Lin, Xiaoding Wang, A new type of sports hairband [P]. Utility patent, Fujian Province: CN214904410U, 2021-11-30.

[4] Jieyu Yang, Lei Jiang, **Feng Yu** et al., "LSTM-based article intelligent generation system", Computer Software Copyright, HNUST, 2019SR1143843.

[5] Bowei Zhang, Wenhua Song, Xiaoliang Wang, **Feng Yu**,"Kuang-Chi Security Cloud Monitoring and Early Warning System for Meeting Cars on Curves", Computer Software Copyright, 2019SR0274946.

[6] Qian Chen, Qiongbin Zhang, Jieyu Yang, **Feng Yu** et al.,"Hele Yiren Pilot Mutual Assistance Platform", Computer Software Copyright, HNUST, 2019SR0545706

Experience

R & D Intern (ISG), Lenovo Computer Technology Co. LTD, Shanghai Jun 2022 – Sep 2022
Involved: Shell/Java/Python/Web programming, BUG fix, Log platform Design

- Responsible for ESXI VM and LXCA installation automation script programming; Familiar with Git, Maven, Jenkins, shell and PowerShell script syntax;
- Learn the BMC, IPMI, Redfish, LXCA platforms, and the use of Jira and Bugzilla; Master LXCA CFC project back-end code workflow, solve several bugs in CFC project;

- Build CFC Server prompt functionality with the Dojo framework; Lean the programming and development of Server Configuration Pattern function module;
- Design and create the **log platform** based on ELK and Kafka cluster (3 nodes), and further optimize Kafka performance.

Undergraduate Graduation Thesis, HNUST Dec 2019 – Jun 2020

Involved: Python, Reinforcement Learning, Recommendation algorithm, Bandit algorithm design

- Develop the collaborative algorithms via matrix factorization and bandit algorithms;
- Apply Python to extract preference features from movie data and propose a novel recommendation algorithm based on the idea of gambling machines.

Service account development, HNUST, Team leader Jun 2018 – May 2019

Involved: Java/Web programming, System Design, Software Engineering

- Participate in the back-end development of the **College's Alumni Association service account**;
- Responsible for the back-end development, front-end and back-end test docking and service launch of the **Waku Yiren pilot mutual aid service account**.

Text Intelligence Challenge, Dagan Data, Team member Jul 2018 – Oct 2018

Involved: Python, SVM, TF-IDF, XGBoost, Machine Learning and Ensemble Learning

- Build a model to predict the category of text through the body of long text data;
- Apply machine learning algorithms (such as SVM, TF-IDF, XGBoost, etc.), and obtain a **Top 10% score**.

ACM-ICPC training team, HNUST, Team member Dec 2016 – Jun 2018

Involved: Data Structure, Algorithm, C++, Java and Python programming

- Master **basic data structure**, such as stack, queue, linked list, binary tree, graph, and lookup set, tree array, line tree, bisect graph, etc.
- Master **basic algorithms**, such as dichotomy, DFS, BFS, dynamic programming, shortest path algorithm, etc.

Service and Teaching

Reviewer

- IEEE TrustCom'24
- IEEE IUCC'24

Conference Organisation

- IEEE TrustCom'23, *Online Session Chair* Nov 2023
- IEEE TrustCom'23, *Reception Volunteer* Nov 2023

Teaching Assistant (TA)

- ECM 2428 IT Project Management, *PTA*, UNEXE Sep 2024 - Dec 2024
- ECM 2414 Software Development, *PTA*, UNEXE Sep 2024 - Dec 2024
- ECM 2433 The C Family, *PTA*, UNEXE Jan 2024 – Apr 2024
- Computer Networks, *TA*, FJNU Sep 2020 – Jan 2021
- Programming Experiment (Data structure and C/C++ programming), *TA*, HNUST 2017 – 2019
- Object Oriented Programming, *TA*, HNUST 2017 – 2018
- Advanced Mathematics and Professional Basic Courses, *CTA*, HNUST 2017 – 2018

Main Honors and Awards

China Scholarship Council and University of Exeter **(*CSC-Exeter*) Scholarships** 2023
Second-class Academic Scholarship in FJNU 2022
Outstanding Graduate in Hunan Province and HNUST (**Top *3%***) 2020
Outstanding Undergraduate Graduation Thesis of College in HNUST 2020
National Encouragement Scholarship (twice), **Outstanding Student Leader** in HNUST 2017 & 2019
First prize (twice) in HNUST 2017 & 2019
Merit Student (twice), College Merit Student Model in HNUST 2018 & 2019
Advanced Individual for Academic Research, Innovation and Entrepreneurship Advanced Individual in HNUST 2018
Third prize in Hunan Division of "Ladder Competition" of Chinese universities 2018
Second prize of "Lanqiao Cup" Hunan Province (twice, C++ and Java) 2018
Bronze prize of CCPC Invitational Competition 2018
First prize of National College Students Electronic Creative Innovation Competition in the national preliminary competition, **Second prize** in the final competition 2018

Second prize in Undergraduate Programming Competition in HNUST 2017
Second prize of Hubei Province in National Mathematics League for High School Students 2015

COMPETENCES

Languages Mandarin (*native*), English (*working proficiency*, IELTS 6.5)
Programming Languages: C/C++, Python, Golang, Java, SQL, HTML, CSS, JavaScript, Bash.
Frameworks & Tools: Git, LaTeX, PyTorch, TensorFlow, FATE, FedLab, Flower, FISCO BCOS, Numpy, Pandas, Scikit-learn, CUDA, Flask, ElasticSearch, Logstash, Kibana, Kafka, SpringBoot, React, Angular, Docker, Redis.
Certificates: Intermediate Software Designer, CCF Certified Software Professional Top 10% (Sep 2018).

INTERESTS

Sports: Running, Cycling, Marathon, Climbing, Triathlon, Badminton, Table Tennis, Basketball, Extreme Sport.
Misc: Travelling, History, Writing and Learn new technologies, such as federated learning, continual learning, generative adversarial network, deep reinforcement learning, few-shot learning, LLMs, recommendation system and related applications.

Last Updated: *Nov 2024*