Kang WANG

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EDUCATION

➢ **PhD of Public Health(in progress)** Sep.2020-July.2024
UNIVERSITY OF WATERLOO (Expected)
School of Public Health and Health Systems, Overall GPA: 94% Waterloo, Canada
Research interests: Machine Learning, IoT, Data Mining, Data Visualization.
Courses: Health data structure; UX/UI design

➢ **Master's Degree in Control Engineering** Aug.2017-Jun.2020
JIANGNAN UNIVERSITY (211 Project) Wuxi, China
School of IoT (Internet of Things) Engineering, Overall GPA: 82.3%
Award: Academic Scholarship granted in Sep.2017, Oct.2018 and Sep.2019 respectively

➢ **Bachelor of Engineering in Electric Engineering and Automation** Sep.2013-Jun.2017
NANJING FORESTRY UNIVERSITY ("Double First-Class" University Project) Nanjing, China
College of Information Science and Technology, Overall GPA:80.2%
Award: Academic Scholarship granted in Oct. 2015 and Sep. 2016 respectively

PUBLICATIONS

➢ **Kang Wang** and Zhiping Zhou, "Distance Ratio-based Weighted Rank Outlier Detection on Wearable Health Data", *2019 IEEE 3rd Information Technology, Networking, Electronic and Automation Control Conference (ITNEC)*, DOI: 10.1109/ITNEC.2019.8729176, ISBN: 978-1-5386-6243-4, INSPEC Accession Number: 18738184, pp. 583-588, 2019.

➢ **Kang Wang** and Zhiping Zhou, "Gaussian Kernel Density Estimation Method for Detecting Abnormal Values of Health Data", *Journal of Frontiers of Computer Science & Technology*, DOI:10.3778/j.issn.1673-9418.1810006, pp. 1-9, 2019.

➢ **Kang Wang** and Zhiping Zhou, "Disease Prediction on Wearables Activity Data Using Stacked Bidirectional LSTM", *Personal and Ubiquitous Computing*, reviewing, 2020.

➢ Eugene Hayden, **Kang Wang**, Chengjie Wu and Shi Cao, "Augmented Reality Procedure Assistance System for Operator Training and Simulation", *In Proc. of the 64th International Annual Meeting of the Human Factors and Ergonomics Society*, 64(1), 1176–1180. DOI: 10.1177/1071181320641281

PATENT & COPYRIGHT

➢ "An auxiliary system for flight operation based on Augmented Reality". CN Parent No. CN 110648405A, filed October 12, 2019, and issued January 03, 2020

➢ "A radio frequency identification security authentication method and system". CN Patent No. CN109714763A, filed December 18, 2018, and issued May 03, 2019.

➢ "An anonymous grouping method and an authentication method of an authentication system". CN Parent No. CN109711216A, filed December 18, 2018, and issued May 03, 2019.

➢ "RFID attack & defense experiment system". Registration No. 2018SR871028, filed July 13, 2108 and issued October 31, 2018.

RESEARCH EXPERIENCE

➢ *Visiting Researcher*, **University of Waterloo** Apr.2019-Aug.2019
  ○ Designed an AR-guided assistance system to enhance pilot training performance in aviation which is implemented on HoloLens. Conducted significant improvements in situation awareness and error measurements compared to a VUI (Voice User Interface). Waterloo, Canada
  ○ Built a testing platform based on three different interfaces which are Xbox, HTC VIVE and Leap Motion respectively for testing how a game player's sense of immersion is affected by the depth (fidelity) of interaction they use in VR.

➢ *Business Partner*, **Wuxi Fantai Technology (Jiangsu) Co., Ltd** Sep.2018-Oct.2019
  ○ Designed a RFID (Radio Frequency Identification) Attack & Defense experiment system to improve privacy protection in healthcare industry. (The system has already been embedded into an experiment box and been in commercial use now.) Wuxi, China
  ○ Developed a video game called 'MoonLanding' via AR technology based on HoloLens.

➢ *Electrical Engineer Intern*, **ROBO Technologies Automation (Suzhou) Co., Ltd** Jun.2017-Aug.2017
  ○ Participated in the design of an AGV (Automated Guided Vehicle) transport vehicle (in charge of algorithm design). Suzhou, China
  ○ Drew the PLC (Programmable Logic Controller) schematic diagram of piler machine by

software EPLAN.

RESEARCH EXPERIENCE (CON'T)

➢ *Front-end Engineer Intern*, **China Telecom Co., Ltd.**   Jul.2016-Aug.2016
  ○ Engaged in the research and development of the core application of telecom IT core   Yangzhou, China
    platform and support system.
  ○ Completed the function pages and script development of China Telecom Client Web by
    calling the backend interface.

RESEARCH PROJECTS

➢ *Individual*, **Automatic Physical Disorder Diagnosis & Personalized Recommendation**   Dec.2017-June 2020
  System
  ○ Proposed two effective machine learning methods GKDELOF (Gaussian Kernel Density
    Estimation-based Local Outlier Factor) algorithm and DRWROF (Distance Ratio-based
    Weighted Rank Outlier Factor) algorithm for the detection of physical diseases relevant
    abnormal data collected by wearable devices.
  ○ Constructed a multi-task learning framework due to the co-occurrence relationship of
    diseases, and combined it with proposed deep learning model called Stacked
    Bidirectional LSTM to achieve automatic diagnosis of physical disorder.
  ○ Employed an advanced collaborative filtering algorithm to develop a smartphone app
    aiming to give healthcare recommendations for different people individually by
    integrating activity abnormal analysis with intelligent diagnosis.
➢ *Individual*, **Wireless Sensor Platform Construction**   Feb.2018-Mar.2018
  ○ Built a Lora server through Docker Swarm to achieve cluster management.
  ○ Implemented the communication between environmental monitoring sensor nodes with
    server through Lora.
➢ *Individual*, **Retail & Shopping APP based on AR**   Apr.2018-May 2018
  ○ Designed an AR commodity retail mobile app to realize user interaction with products
    through VSLAM and 3D model reconstruction technology.
➢ *Individual*, **Intelligent Temperature Controller**   Mar.2017-Jun.2017
  ○ Designed an intelligent temperature controller independently to control the temperature
    in three different modes by PID (Proportion Integration Differentiation) algorithm.
  ○ Completed the design of circuit, welding of PCB and C language coding to realize
    functions of the controller.
➢ *Group Leader*, **Image Processing Project**   Dec.2017-Jan.2018
  ○ Detected the qualification of capsules sequences based on capsules images.
  ○ Located workpiece template objects in the test image, and determined the size.
➢ *Group Leader (coding)*, **News Stance Detection ("Fake News Challenge")**   May.2018-Jul.2018
  ○ Proposed a two-step model that combines SVM and LSTM to classify the stance of
    news' body text relative to the claim made in headline into one of four categories:
    Agree, Disagrees, Discusses and Unrelated. The model accuracy is 88.55%.

HONORS & ACTIVITIES

➢ Waterloo AI institution Scholarship   March.2021
➢ The Third Prize in the 2018 Jiangsu Postgraduate Cyberspace Security Scientific Research   Dec.2018
  Innovation & Practice Competition
➢ The Winning Prize in the Jiangsu Postgraduate Computer Vision Innovation & Practice   Nov.2018
  Competition
➢ Volunteer at 2018 World Internet of Things Exposition (WIOT)   Sep.2018
➢ Volunteer at 2018 BEVERLY Wuxi Marathon   Mar.2018

ENGLISH PROFICIENCY & COMPUTER SKILLS

IELTS: 7.5 (Listening 8.0, Reading 8.0, Writing 6.0, Speaking 7.0) Test Date: Aug.17, 2019
Programming: Proficient in Html, CSS, JS, C#, C++, Java and Python
Software: Proficient in Unity, Git, MATLAB, MySQL, Simulations, etc.

SELF-ASSESSMENT

Highly self-discipline; be willing to learn and handle tough tasks to challenge myself
Great cooperation and collaborative skills developed through group design projects
Great communicational skills (both verbal and writing ability) strengthened through intern experience