Xiyang Peng

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Skills & Abilities

Programming	Proficient: **Java,Python,JavaScript,CSS,C,C++** Comfortable: **MATLAB** Familiar: PHP
Databases	**MySQL, Oracle**
Frameworks	**Struts, Spring, Hibernate**, **jQuery**, **Bootstrap**
Tools	**Gradle**, **Git**, **Maven**

Education Experience

Dec.2021 – Present	**Phd in Computer Science**, SHEFFIELD UNIVERSITY, UK
Aug. 2018 – Jun. 2021	**M.S. in Software Engineering**, YUNNAN UNIVERSITY, China
Sep 2014 – Jun. 2018	**B.S. in Software Engineering**, JISHOU UNIVERSITY, China

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Publications

2024 **Xiyang Peng**, Yuting Zhao, Ziheng Li, Xulong Wang, Fengtao Nan, Zhong Zhao, Yun Yang, Po Yang. Multi-Scale and Multi-Level Feature Assessment Framework for Classification of Parkinson's Disease State from Short-Term Motor Tasks. IEEE Transactions on Biomedical Engineering. (Accepted)

2024 Yuting Zhao, Xulong Wang, **Xiyang Peng**, Ziheng Li, Fengtao Nan, Menghui Zhou, Jun Qi, Yun Yang, Zhong Zhao, Po Yang. Representative MDS-UPDRS Activities Selection and Evaluation Framework with Consumable Wearable Devices for Effective Self-Assessment of Parkinson's Disease. IEEE Journal of Selected Areas in Sensors. (Accepted)

2023 Li, Ziheng, **Xiyang Peng**, Yuting Zhao, Xulong Wang, Yun Yang, and Po Yang. "A Weakly Supervised Learning Framework for Parkinson's Disease Assessment Using Wearable Sensor." In 2023 19th International Conference on Mobility, Sensing and Networking (MSN), pp. 813-818. IEEE, 2023.

2021 Tao, Liu, Xiang Wang, **Xiyang Peng**, Po Yang, Jun Qi, and Yun Yang. "Activity selection to distinguish healthy people from parkinson's disease patients using i-da." In 2021 17th International Conference on Mobility, Sensing and Networking (MSN), pp. 66-73. IEEE, 2021.

2020 Jun Qi ;Po Yang; Lee Newcombe; **Xiyang Peng** ;Yun Yang; Zhong Zhao, An overview of data fusion techniques for Internet of Things enabled physical activity recognition and measure,Information fusion,2020.3,55: 269 280

2020 **Xiyang Peng**, Wang, X., Qi, J., Yang, Y., Li, J. and Yang, P., 2020, December. Experimental analysis of artificial neural networks performance for accessing physical activity recognition in daily life. In 2020 IEEE Intl Conf on ISPA/BDCloud/SocialCom/SustainCom pp. 1348-1353. IEEE.

2019   Jun Qi; Yun Yang; **Xiyang Peng**; Lee Newcombe; Andrew Simpson; Po Yang, Experimental Analysis of Artificial Neural Networks Performance for Physical Activity Recognition Using Belt and Wristband Devices, 2019 41st Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), 23-27 July 2019

Projects Experience

PYTHON   **Wearable smart technology research for activity identification and measurement of Parkinson's disease patients leaving hospital**, *(general project of national Natural Science Foundation of China).*

Keywords:
- Applied computing, Life and medical sciences, Health informatics

Contributions:
- A new feature assessment framework that exploits the correlation between motor symptoms(tremor, rigidity, bradykinesia) and severity of PD.
- Model development and evaluation through imbalanced data with individual difference analysis.
- Introducing a new method to enhance the predictability of clinical scores for PD by studying the relationship between activity labels and illness severity labels.

PYTHON   **Wearable technology for activity recognition in daily life**, *(postgraduate research innovation project of Yunnan University)*

Keywords:
- Physical activity recognition, artificial neural networks, wearable device, healthcare, sensor fusion

Contributions:
- Compared the activity recognition accuracy of data collected by accelerometer(ACC), gyroscope(GRO) and magnetometer(MAG) respectively. Artificial Neural Networks (ANN) are defined and established after ACC, GRO and MAG features' fusion. And we demonstrated how to select the window size and overlap when we segment the raw data.

JAVA   **Big Data Analysis System Based on WIFI probe**, *(3rd position in the 6th "China Software Cup" Software Design Competition)*

Keywords:
- window/Linux, Eclipse, WiFi Probe, Java, Hadoop distributed file storage, Hive data warehouse, Kafka distributed publishing Subscribe messages, Redis cache

Contributions:
- Developed a desktop platform based on the probe device to collect the geographical location of the person, distance from the probe, time. The collected data is sent to the server regularly and is used to analyze some indicators of the human flow by offline and real-time calculation. At last, the analyzed indicators are displayed as web pages, providing a decision-making basis for the business environment.

JAVA   **Online Tea mall based on JAVAEE**

Keywords:
- Oracle, Spring, Hibernate, Struts2, HTTP secure transport protocol, Fusion chart report technology, Json transmission format

Contributions:
- Developed a tea trading e-commerce platform with both front-end and back-end functionalities. Customers can add items to the shopping cart, create orders, and pay for orders. Sellers can publish new products, manage product information, and deliver paid goods. Administrators can manage user information and order information.

Patents and Software Copyright

Patents   **An electronic device for assessing the condition of Parkinson's disease 2022108089751 [Registered]**, *Fan Zhixiang, Yang Po, Nan Fengtao, Peng Xiyang, Wu Chaohua, Chen Runchang, Chen Peng, (Applicant: Huawei Technologies Co., Ltd.)*

Software   **Human activity recognition system**, *2020SR0984416*

Software   **Village Art Teaware Trading Platform**, *2020SR1032586*

Software   **Han Hao Poetry Platform**, *2020SR1018669*

Software   **Community Management System**, *2020SR1018109*