CHONGYANG **WANG**

University College London | PhD Candidate

UCL personal website | chongyang.wang.17@ucl.ac.uk

github.com/Mvrjustid | 66-72 Gower St, London, WC1E 6EA

Chongyang Wang, born in Oct 1995, is a PhD candidate at UCL interaction centre under the supervision of Prof. Nadia Berthouze and Dr. Nic Lane. Prof. Amanda Williams is acting as the honorary supervisor who help enrich the theoretical background from a clinical psychology perspective. His research focuses on ubiquitous and affective computing for smart healthcare. He was awarded two prestigious scholarships from UCL to carry out his PhD studies on the interdisciplinary topic of developing new body sensing technology to support chronic pain physical rehabilitation.

Ubiquitous computing, Affective computing, AI for healthcare

EDUCATION

University College London | United Kingdom | 2017-2021
Ph.D. in Ubiquitous and Affective Computing (Writing-up).
Supervisor : Prof. Nadia Bianchi-Berthouze (UCL) and Dr. Nicholas D. Lane (University of Cambridge).
First-year and upgrade Viva passed.

Southwest University | China | 2013 - 2017
B.E. in Electronic and Information Engineering (Awarded).
Supervisor : Prof. Tong Chen.
Final average academic grade ranked 2nd in the major with 82 students in total.
GPA:3.79/4.

RESEARCH PROJECTS

12.2021 – 03.2021

Learning from Multiple Annotators without Objective Groundtruth | National Key R&D Program of China (2020YFB1313300) | AIRS, CUHK(SZ) | Visiting Scholar

- Proposed a novel agreement learning framework to tackle the learning with multiple annotators while the objective groundtruth is ambiguous to define.
- Modeled the uncertainty existed in annotations with a novel general agreement distribution and an agreement regression loss function, while improved the robustness of the framework.
- Collaborated on another project of video question answering and heterogeneous multi-agent reinforcement learning.
- Completed two papers.

12.2021 – 09.2017

Protective Behavior Detection in Continuous Data of Functional Activities for the Rehabilitation of People with Chronic Pain | EU Horizon 2020 FET PROACTIVE Project (Grant agreement : 824160, EnTimeMent) | UCL | PhD Student

- Proposed novel deep learning architectures and frameworks considering the biomechanics of full-body IMU (skeleton) data and the relation between the affect-influenced movement behavior and activity types.
- Studied data preprocessing methods for IMU and surface EMG data.
- Tackled the influence of the small and imbalanced dataset.
- Published papers at IMWUT, ACM HEALTH, Ubicomp/ISWC.

03.2021 – 04.2016

Spontaneous Facial Micro-Expression Recognition with Deep Learning | National Natural Science Foundation of China (61301297) | SWU, Institute of Psychology, Chinese Academy of Science | Research Assistant

- Proposed novel deep learning methods to improve the recognition of micro-expression, by considering the nature of it, e.g., the sparsity in its spatial and temporal distributions.
- Evaluated the proposed methods on CASME, CASME II, SMIC, and SAMM datasets, and achieved significantly improved recognition accuracy.
- Published papers at Frontiers in Psychology, Neurocomputing, ACII'19, and submitted another paper to IEEE Transactions on Multimedia.

03.2016 – 09.2015 | **Near-Infrared Face Identification with Deep Learning** | **National Natural Science Foundation of China (61301297/61472330)** | **SWU** | **Research Assistant**

- Proposed a novel convolutional neural network structure based on GoogLeNet to conduct near-infrared face identification.
- Tested the network on the CASIA NIR database under various conditions, compared our work with several state-of-the-art methods, improved the identification accuracy dramatically.
- Published a paper at Information.

KEY PUBLICATIONS

Journal Papers

[1] **Chongyang Wang**, Yuan Gao, Akhil Mathur, Amanda C. De C. Williams, Nicholas D. Lane and Nadia Bianchi-Berthouze. "Leveraging Activity Recognition to Enable Protective Behavior Detection in Continuous Data". Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT), 5, 2, 2021. **Oral presentation**. CCF A.

[2] **Chongyang Wang**, Temitayo A. Olugbade, Akhil Mathur, Amanda C. De C. Williams, Nicholas D. Lane, and Nadia Bianchi-Berthouze. "Chronic-Pain Protective Behavior Detection with Deep Learning". ACM Transactions on Computing for Healthcare (ACM HEALTH), 2, 3, 2021.

[3] Min Peng, **Chongyang Wang***, Yuan Gao, Tao Bi, Tong Chen, Yu Shi, Xiang-Dong Zhou. "Recognizing Micro-expression in Video Clip with Adaptive Key-frame Mining". IEEE Transactions on Multimedia, under review, arXiv : 2009.09179, 2021. JCR Q1, IF 6.513.

[4] **Chongyang Wang**, Min Peng, Tao Bi, and Tong Chen. "Micro-Attention for Micro-Expression recognition". Neurocomputing, 410, 2020. JCR Q1, IF 5.719.

[5] Min Peng, **Chongyang Wang***, Tong Chen, Guangyuan Liu, and Xiaolan Fu. "Dual temporal scale convolutional neural network for micro-expression recognition". Frontiers in Psychology, 8, 2017. JCR Q2, IF 2.99.

[6] Min Peng, **Chongyang Wang***, Tong Chen, and Guangyuan Liu. "NIRFaceNet : A convolutional neural network for near-infrared face identification". Information, 7(4), 2016. JCR Q3, IF 2.38.

Conference Papers

[1] Min Peng, **Chongyang Wang***, Yu Shi and Xiangdong Zhou. "Heuristic Multi-scale Interaction Model for Video Question Answering." Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR'22), 2021, submitted. CCF A.

[2] **Chongyang Wang**, Yuan Gao, Chenyou Fan, Junjie Hu, Tin Lun Lam, Nicholas D. Lane and Nadia Bianchi-Berthouze. "AgreementLearning : An End-to-End Framework for Learning with Multiple Annotators without Groundtruth." arXiv : 2109.03596, 2021.

[3] Min Peng, **Chongyang Wang***, Yuan Gao, Yu Shi and Xiangdong Zhou. "Temporal Pyramid Transformer with Multimodal Interaction for Video Question Answering." arXiv:2109.04735, 2021.

[4] Gold, N. E., **Chongyang Wang***, Temitayo Olugbade, N. Berthouze, and A. Williams. "P[l]aying Attention : Multi-Modal, Multi-Temporal Music Control". International Conference on New Interfaces for Musical Expression (NIME), 2020. Poster presentation.

[5] **Chongyang Wang**, Temitayo A. Olugbade, Akhil Mathur, Amanda C. De C. Williams, Nicholas D. Lane, and Nadia Bianchi-Berthouze. "Recurrent network based automatic detection of chronic pain protective behavior using MoCap and sEMG data." 23rd International Symposium on Wearable Computers (ISWC/Ubicomp'19), ACM, 2019. **Oral presentation**. CCF A.

[6] **Chongyang Wang**, Peng, M., Olugbade, T. A., Lane, Nicholas. D., Williams, A. C. D. C., and Bianchi-Berthouze, Nadia. "Learning Bodily and Temporal Attention in Protective Movement Behavior Detection". 8th International Conference on Affective Computing and Intelligent Interaction Workshops and Demos (ACIIW'19), IEEE, 2019. **Oral presentation**.

[7] Min Peng, **Chongyang Wang***, Bi, Tao, Chen, Tong., and Zhou, X. "A Novel Apex-Time Network for Cross-Dataset Micro-Expression Recognition". 8th International Conference on Affective Computing and Intelligent Interaction (ACII'19), IEEE, 2019. Poster presentation.

[8] Min Peng, **Chongyang Wang***, and Tong Chen. "Attention Based Residual Network for Micro-Gesture Recognition". Proceedings of 13th IEEE International Conference on Automatic Face and Gesture Recognition (FG'18), IEEE, 2018. **Oral presentation**. CCF C.

Google Scholar (citations : >300, h-index : 9, i10-index : 8) (* denotes equal contribution)

INTERNSHIPS

AIRS | **Visiting Scholar** | **Shenzhen, CN** 03.2021 - 06.2021

AIRS

Linux | Tensorflow

Sujing's Group, Institute of Psychology, Chinese Academy of Science | Student Intern | Beijing, CN 09.2016 - 03.2017

Sujing Wang

Linux | OpenCV | Caffe

Department of Biomedical Informatics , Harvard Medical School | Student Intern | Boston, USA 08.2015 - 09.2015

HMS

Matlab | R

ACADEMIC ACTIVITIES

Reviewer

-Journals : IMWUT, ACM Transactions on Intelligent Systems and Technology, IEEE Transactions on Multimedia, IEEE Transactions on Human-Machine Systems, Journal of Signal Processing Systems.
-Conferences : Ubicomp'19/20/21, ACII'21/19, ICMI'20/21, SmartCOMP'20, Mobicomp'19, PerCom'19.

Organizer

Data chair of EmoPain Challenge 2019 (based in ACII'19), 2020 (based in FG'20), 2021 (based in ACII'21).

Invited Speaker

-'Ubiquitous Human Behavior Sensing for Intelligent Chronic Pain Rehabilitation'
'Nursing + X' Forum, School of Nursing, Shanghai Jiao Tong University, 10 2021.

-'The Role of AI in Chronic-pain Management'
A Showcase for Hospital Authority (HA) of Hongkong, AIRS, 04 2021.

-'Leveraging Activity Recognition to Enable Protective Behavior Detection in Continuous Data'
AI Society Journal Club, UCL, 02 2021.

-'From Facial Micro-Expression Recognition to Protective Movement Behavior Detection'
Cyber Physical Systems Seminar, Department of Computer Science, University of Oxford, 12 2018.

TEACHING EXPERIENCES

Teaching Assistant | 2017-2021
COMP0053, Affective Computing and Human Robot Interaction (postgraduate course) at UCL, Full time.
PSYC0021, Affective Interaction (postgraduate course) at UCL, Part time.

Supervision | 2020 - 2021
Cen Guanting, M.Sc Project at UCL.
Kexin Yi, B.Eng Project at HUST

AWARDS

UCL ORS-GRS | 2017-2021
UCL Overseas Research Scholarship and Graduate Research Scholarship, the full scholarship for postgraduate research student.

China National Scholarship | 2016
The highest scholarship of China for the top 0.2% undergraduate students.

Honorable Mention | 2016
The annual interdisciplinary contest in modeling, control number 52317.

The First-class Scholarship | 2014, 2015
The highest scholarship of SWU for the undergraduate student.

SKILLS

Language	Toefl iBT 101 (writing 28, reading 26, listening 27, speaking 20).
Sensors	IMU, sEMG, Empatica bracelet, Myo EMG armband, Notch motion capture, MS Kinect
Coding	Python (5 years), C (6 years), TensorFlow and Keras (4 years), LaTeX(4 years).