CHONGYANG **WANG**

University College London | PhD Candidate

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Chongyang Wang 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 Affective and Ubiquitous 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

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

- Design novel deep learning methods to learn with multiple expert annotators while objective ground-truth is ambiguous to define.
- Model the uncertainty in the decision making of each annotator, while improve the robustness of the model.
- Publish paper at top conference venues.

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

- Design novel deep learning methods considering the biomechanics of full-body IMU (skeleton) data and the relationship between the affect-influenced movement behavior and activity type.
- Design novel approach for knowledge learning from multiple domain-expert annotators.
- Design novel data representation for IMU and surface EMG data.
- Tackle the influence of the small and imbalanced dataset.
- Publish papers at IMWUT, Ubicomp/ISWC, ACM HEALTH.

03.2021 – 04.2016

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

- Designed novel deep learning methods to improve the recognition of micro-expression, by considering the nature of it, e.g., the low-intensity and short-period.
- Previous studies we proposed were evaluated on the CASME, CASME II, SMIC and SAMM datasets with significantly improved recognition accuracy.
- Papers published at Frontiers in Psychology, Neurocomputing, ACII'19.

03.2016 – 09.2015

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

- Designed a new 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.
- Paper published 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.

[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.

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

[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.

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

Conference Papers

[1] 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.

[2] **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**.

[3] **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**.

[4] 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.

Google Scholar

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

Program Committee Member
-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, ICMI'20, SmartCOMP'20 Industry Track, Mobicomp'19, ACII'19 Workshops, PerCom'19 Industry Track.

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

Invited Speaker
-'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
Coding	Python (4 years), C (5 years), TensorFlow and Keras (3 years), LaTeX(4 years).