DIFENG YU | CURRICULUM VITAE

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My current research in Human-Computer Interaction focuses on 1) investigating user behavior and performance in 3D virtual environments and 2) creating novel interactive techniques in augmented and virtual reality systems. I am also broadly interested in computer vision, sensing techniques, and machine learning.

Education

2014-2018 **B.Sc. Information and Computing Science**, Xi'an Jiaotong-Liverpool University (XJTLU)
B.Sc. Information and Computing Science, **First Class (Honours)**, University of Liverpool (UoL)
Overall Mark: 84/100 (British marking criteria) Thesis Advisor: Prof. Hai-Ning Liang

Academic Positions

2018-present **Teaching Assistant**; XJTLU, Suzhou, China
Research Assistant; VR Lab, XJTLU, Suzhou, China

2016-2018 **Undergraduate Research Intern**; VR Lab, XJTLU, Suzhou, China

Fellowships and Awards

2018 **Best Performance in Final Year Project (FYP)** (1 of 2 of 71), Department of CSSE, XJTLU
Best Overall Academic Performance (1 of 71), Department of CSSE, XJTLU
Excellent FYP Nominee (1 of 5 of entire Uni), Jiangsu Provincial Department of Education

2017 **National Scholarship** (Around 0.2% nationally), Chinese Ministry of Education
University Academic Excellence Award (Top 5%, Rank 1 in CSSE Department), XJTLU
Outstanding Student (Top 5%), XJTLU
Summer Undergraduate Research Fellowship (SURF), XJTLU

Publications

Published (3) **Pizzatext: text entry for virtual reality systems using dual thumbsticks**. *IEEE Transactions on Visualization and Computer Graphics, 2018*. ISMAR TVCG Special Section: 13.4% accepted.
D. Yu, K. Fan, H. Zhang, D. V. Monteiro, W. Xu, and H. N. Liang

Evaluating engagement level and analytical support of interactive visualizations in virtual reality environments. *In Proc. ISMAR, 2018*. Conference Proceedings: 15.1% accepted.
F. Lu, **D. Yu**, H. N. Liang, W. Chen, K. Papangelis, and N. M. Ali

Target selection in head-mounted display virtual reality environments. *Journal of Universal Computer Science, 2018*.
D. Yu, H. N. Liang, F. Lu, V. Nanjappan, K. Papangelis, and W. Wang

Conditional Acceptance (2) **DMove: directional motion-based interaction for augmented reality head-mounted displays**. Conditional Acceptance for *CHI 2019.*
W. Xu, H. N. Liang, Y. Zhao, **D. Yu**, and D. V. Monteiro

RingText: dwell-free and hands-free text entry for mobile head-mounted displays using head motions. Conditional Acceptance for *TVCG* (*In Proc. IEEE VR 2019 Journal Paper*).
W. Xu, H. N. Liang, Y. Zhao, T. Zhang, **D. Yu**, D. V. Monteiro, and Y. Yue

Submitted (3) **Design and evaluation of visualization techniques of off-screen and occluded targets in virtual reality environments**. Submitted to *IEEE Transactions on Visualization and Computer Graphics*. Under the Second Round Review.
D. Yu, H. N. Liang, K. Fan, H. Zhang, C. Fleming, and K. Papangelis

DepthMove: an exploration of the use of head motions in the depth dimension to interact with virtual reality head-worn displays. Submitted to *IEEE VR 2019* Conference Paper.
D. Yu, T. Zhang, H. N. Liang, and W. Xu

DepthText: hands-free text entry for mobile virtual reality systems. Submitted to *IEEE VR 2019* Conference Paper.
X. Lu, **D. Yu**, H. N. Liang, X. Feng, W. Xu

Patents

Published (1) **A technique for visualizing off-screen and occluded targets in virtual environments**. 2017. CN Patent Pub. CN107730592A.

Pending (1) **A text entry technique for virtual reality systems using dual thumbsticks**. 2018. CN Patent App. 201810711539.6.

Research Experiences (Highlights)

2018 **Team Leader; DepthSelection Project; VR Lab**
Designed and conducted two user studies to investigate, model, and further optimize a new selection technique called DepthSelection with VR head-worn displays. Drafted the full paper based on the results [paper submitted].

Team Leader; VRHome Project; Computer Games Design Group Project
Developed a VR game in Unity3D platform named VRHome which allowed the user to travel to five different scenes (e.g. space and forest) and interact with the virtual kid (like feeding).

Team Leader; PizzaText Project; VR Lab
Devised a new text entry technique for VR systems using dual thumbsticks. Evaluated the technique with two user studies. Drafted the full paper [paper published, patent pending].

Research Intern; Department of Industrial Design, XJTLU
Built multiple machine learning models to predict fabric performance.

2017-2018 **Team Member; VRSVT Project; VR Lab**
Evaluated user engagement level and analytical support of an interactive visualization tool (VR Solid Visualization Tool) in VR environments. Drafted part of the paper [paper published].

2017 **Team Leader; 3DWedge Project; VR Lab**
Designed and evaluated five techniques for visualizing off-screen and occluded targets in VR environments. Drafted the full paper [paper submitted, patent published].

Back-End Web Developer; Co-Papers Project; Software Engineering Group Project
Implemented an online website which allowed people to read, write, search, and share reading notes. Users can register and log into the system to comment on others' notes and follow their favorite users. Contributed 3000+ lines of code.

Extracurricular Experiences

2018 **Paper presenter and student volunteer of ISMAR 2018; Munich, Germany**

Presenter of the graduation speech; Industrial Technology cluster, XJTLU

2017 **Trainee of ACM Summer School on Crowdsourcing; Suzhou, China**

Honorable Mention in the Mathematical Contest in Modeling (MCM); COMAP, USA

TA Trainee of IoT technology; Research Institution of Big Data Analytics, XJTLU
Built an intelligent greenhouse based on Internet of Things (IoT).

2016 **AIESEC Global Volunteer (Summer); Plovdiv, Bulgaria**
Organized weekly seminars and workshops with AIESEC Bulgaria for women and children.

2015-2016 **Local Committee Vice President; AIESEC XJTLU**
We (the department I led) cultivated youth leadership by offering global internship opportunities. I also organized events like Regional Induction Conference (350+ students from universities in Eastern China), YouthSpeak Forum (350+ participants), and AIESEC Night (200+ participants).

2015 **AIESEC Global Volunteer (Summer); New Delhi, India**
Worked in Care Promise Welfare Society (CPWS) and delivered two speeches on HIV/AIDS to more than 600 Indian students.

Advanced Placement (AP) tutor on Physics & Mathematics; Global IELTS School, China

Skills

Programming C#, Java, R, Python, C++, C, HTML, PHP, SQL, Prolog, Shell

Tools Unity3D, SPSS, Matlab, Latex, Linux, Weka

Standardized Tests

TOEFL	Reading: 25 Listening: 27 Speaking: 23 Writing: 25 Total: 100	Test Date: 2018.9.2
GRE	Verbal: 155 Quantitative: 168 Analytical Writing: 3.5	Test Date: 2018.9.28