

Jingwen Dai, PhD

CONTACT INFORMATION

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SUMMARY

- 10+ years' research and development experience in the domain of computer vision, and its applications in human-computer interaction, & virtual/augmented reality.
- Strong team leadership skills in effective product planning, task oversight and rapid technology transfer.

WORKING EXPERIENCE

Guangdong Virtual Reality Technology Co., Ltd. (aka. Ximmerse), Shenzhen, China
Co-Founder, Executive Director & CTO **08/2015 - present**

- Lead the R&D and engineering team (40+ scientists and engineers of algorithm, hardware, embedded software, SDK, testing and engineering teams).
- *Products Highlights*
 - 2017 **(AR)** Inside-out interaction solution for LENOVO & DISNEY MIRAGE. <http://www3.lenovo.com/us/en/jedichallenges/>
 - 2017 **(AR)** 3-DoF controller product for MIRA. <https://www.mirareality.com>
 - 2017 **(VR)** 6-DoF outside-in VR controller product for HTC LINK. <http://www.htc.com/jp/about/newsroom/2017/2017-05-25-htc-u11-gits/>
 - 2017 **(VR)** 3-DoF VR controller product for ZEISS VR ONE CONNECT. <https://www.zeiss.com/virtual-reality/vr-one-connect.html>
 - 2017 **(VR)** 3-DoF VR controller product for OCCIPITAL BRIDGE. <https://bridge.occipital.com>
 - 2017 **(VR)** 3-DoF controller in QUALCOMM HMD Accelerator Program (HAP). <https://www.qualcomm.com/news/onq/2017/06/27/shift-mobile-vr-now>
 - 2016 **(VR)** 6-DoF outside-in VR controller in SAMSUNG Accessory Partnership Program (SMAPP).
 - 2016 **(VR)** 3-DoF VR controller solution for XIAOMI MiVR. <http://www.mi.com/mivr/>

Lenovo Research & Technology, Hong Kong

Manager & Advisory Researcher, Image & Visual Computing Lab **04/2015 - 07/2015**

- Lead of 3D vision group (6 researchers & 4 engineers), contributing total 3D vision solution to Lenovo Mobile BU, depth based applications of refocus, magic cut-out and 3D gadget will be launched in Lenovo VIBE S1 in June 2015.

Staff Researcher, Image & Visual Computing Lab **01/2014 - 03/2015**

- Technical lead of Super Camera group (3 researchers & 6 engineers), delivering intelligent photography solution to Lenovo Mobile BU, real-time smart composition guide feature has been launched in Lenovo VIBE Shot in May 2015.
- Lead of immersive communication group, prototyping next generation video conference system and tele-presence system.
- Key member of FunnyFace project and push face beautification features (the world first successful case in real-time video call) to Lenovo's video call software *YouYue* in March 2014.
- Principal contributor of Lenovo first gaze correction technology for home video conferencing.

The University of North Carolina at Chapel Hill, NC, USA

Postdoctoral Research Associate, Department of Computer Science **11/2012 - 12/2013**

- Research staff in BeingThere Center UNC and worked with Prof. Henry Fuchs (Member of NAE; Fellow of ACM, IEEE and AAAS; ACM SIGGRAPH Steven A. Coons Award). Involved in project of mobile animatronics telepresence system and room-size telepresence system.

Nanyang Technological University, Singapore

UNC Visiting Researcher

01/2013 - 12/2013

- Collaborate with the researchers from ETH Zurich and NTU to develop next generation telepresence system prototypes.

HJTech, Shanghai, China

Senior Research Engineer

04/2010 - 10/2012

- In charge of architecture and algorithm design for face identification based immigration clearance system, which was applied in Shanghai Yangshan Port.
- Involved in algorithm transplant to embedded system (DaVinci and ARM platform). In charge of algorithm simplification and optimization.

Co-Founder & CTO

03/2009 - 07/2009

- Co-founded a technology start-up company, which is focus on face recognition related products. The core technology is mainly based on my master research works.
- Led the R&D team to optimize face recognition algorithms and develop application software.
- The face identification based products had been applied in many areas: Checking attendance in office buildings and schools in Shanghai; Access control in residences in Shanghai and Jiangsu and in prisons in Jiangsu, Guangdong and Jiangxi.

The Chinese University of Hong Kong, Hong Kong

Research Assistant, Computer Vision Lab

08/2009 - 08/2012

- Involved in several research projects partially sponsored by Hong Kong Research Grants Council, Qualcomm and CUHK MoE-Microsoft Key Laboratory of Human-Centric Computing and Interface Technologies.
- Research area focused on human-computer interaction in projector-camera system.
- Developed a real-time 6-DOF human head pose estimation system under normal illumination embedded with imperceptible structured codes.
- Developed a natural user interface, making any tabletop surface to which the projection is illuminated become a touch-sensitive computer screen, just by a mere video projector and camera.

Shanghai Jiao Tong University, Shanghai, China

Research Assistant, Research Center of Intelligent Robotics

09/2006 - 02/2009

- Involved in computer vision group, which is partially sponsored by National Natural Foundation of China and Program for New Century Excellent Talents of Ministry of Education, China.
- Research area focused on face detection, face tracking and face recognition.
- Developed a real-time face recognition system independently, which is the foundation for HJTech products.

EDUCATION

The Chinese University of Hong Kong (CUHK), Hong Kong

08/2009 - 09/2012

Ph.D. in Computer Vision, Department of Mechanical and Automation Engineering

- PhD Thesis: "Use of Projector-Camera System for Human-Computer Interaction"
- GPA: 3.8/4.0

Shanghai Jiao Tong University (SJTU), Shanghai, China

09/2006 - 03/2009

M.E. in Robotics, Department of Automation

- Master Thesis: "The Fundamental Research of Practical Face Recognition System"
- Major GPA: 3.7/4.0, Top 5%

PUBLICATIONS

Thesis

- J. Dai, Use of Projector-Camera System for Human-Computer Interaction, *PhD Thesis*, The Chinese University of Hong Kong, September 2012.
- J. Dai, The Fundamental Research of Practical Face Recognition System, *Master Thesis (in Chinese)*, Shanghai Jiao Tong University, January 2009.

Journal Paper

- J. Dai and R. Chung, Touchscreen Everywhere: On Transferring a Normal Planar Surface to a Touch-Sensitive Display, *IEEE Transactions on System, Man and Cybernetics, Part B*, 44(8):1383-1396, 2014.
- J. Dai and R. Chung, Embedding Invisible Codes into Normal Video Projection: Principle, Evaluation and Applications, *IEEE Transactions on Circuit and System for Video Technology*, 23(12):2054-2066, 2013.
- J. Dai, D. Liu and J. Su, The Method of Rapid Eye Localization Based on Projection Peak, *Pattern Recognition and Artificial Intelligence (in Chinese, Indexed by EI)*, 22(4):605-609, 2009.

Conference Paper

- J. Dai, G. Welch and H. Fuchs, Encumbrance-free Shader Lamps Avatars for Tele-presence, *In Preparation*.
- Y. Hu, J. Ren, J. Dai, C. Yuan, L. Xu and W. Wang, Deep Multimodal Speaker Naming, *In Proc. of The 23rd Annual ACM International Conference on Multimedia (MM'15)*, 2015.
- J. Dai and R. Chung, Sensitivity Evaluation of Embedded Code Detection in Imperceptible Structured Light Sensing, *In Proc. of IEEE Winter Vision Meetings - Workshop on Robot Vision (WoRV'13)*, pages 34-39, 2013.
- J. Dai and R. Chung, Making Any Planar Surface into a Touch-sensitive Display by a Mere Projector and Camera, *In Proc. of 25th IEEE Conference on Computer Vision and Pattern Recognition (CVPR'12) - Workshop (PROCAMS'12)*, pages 35-42, 2012.
- J. Dai and R. Chung, On Making Projector both a Display Device and a 3D Sensor, *In Proc. of The 8th International Symposium on Visual Computing (ISVC'12)*, pages 654-664, 2012.
- J. Dai and R. Chung, Combining Contrast Saliency and Region Discontinuity for Precise Hand Segmentation in Projector-Camera System, *In Proc. of The 21st International Conference on Pattern Recognition (ICPR'12)*, pages 2161-2164, 2012.
- J. Dai and R. Chung, Embedding Imperceptible Codes into Video Projection and Applications in Robotics, *In Proc. of IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS'12)*, pages 4399-4404, 2012.
- J. Dai and R. Chung, Head pose estimation by imperceptible structured light sensing, *In Proc. of IEEE International Conference on Robotics and Automation(ICRA'11)*, pages 1646-1651, 2011.
- J. Dai, D. Liu and J. Su, Projection Peak Analysis for Rapid Eye Localization, *In Proc. of The International Conference on Computer Vision Theory and Applications(VISAPP'09)*, pages 315-320, 2009.
- F. Yang, J. Dai and D. Liu, A novel eye localization method based on spectral residual model, *In Proc. of The 7th World Congress on Intelligent Control and Automation(WCICA'08)*, pages 6773-6777, 2008.
- F. Yang, J. Su and J. Dai, Fast Quality Assessment of Face Images for Face Recognition, *In Proc. of The 27th Chinese Control Conference(CCC'08)*, pages 531-535, 2008.

HONORS & AWARDS

Peacock Plan (Level C) of Shenzhen	2016
FY14/15 Excellent Performance Employee of Lenovo R&T	2015
FY14/15 Outstanding Team Award(Super Camera) of Lenovo R&T	2015
FY14/15 1H Excellent Performance Employee of Lenovo R&T	2014
FY14/15 1H Excellent Project Team (Super Camera) of Lenovo R&T	2014
Individual Instant Award of Lenovo R&T	2014
Postgraduate Fellowship of The Chinese University of Hong Kong	2009-2012
Excellent Student of Shanghai Jiao Tong University	2008
Kwang-Hua Scholarship of Shanghai Jiao Tong University	2008
Excellent League Member of Shanghai Jiao Tong University	2007
JIDIAN Electronics Technology Scholarship of Shanghai Jiao Tong University	2007
Full Tuition Scholarship of Shanghai Jiao Tong University	2006-2009