Xue TENG

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Highlight & Research Interests

As a multidisciplinary researcher, I have published in top-tier conferences/journals **in all my research areas**, including IEEE VR (top conference in Virtual Reality), the Journal of the American Chemical Society (JACS, Impact Factor 14.5), and the Association for the Advancement of Artificial Intelligence (AAAI, top-tier conference in AI). **As of Sep 2024, my publications have 1561 citations based on Google Scholar.**

Research interests:

- Shared Affordance and spatial consistency in Virtual, Augmented, and Mixed Reality
- Shared interaction and perception between virtual and augmented presences
- Inclusive VR: Fall risk assessment, instability prediction and user wellness across demographics

Degrees

- 2019/9-2022/5, Department of Electrical Engineering & Computer Science, York University, *Canada*

  Master of Applied Science, **Supervisor: Professor Robert Allison**

  Thesis Title: **Depth perception under scaled motion parallax in Virtual Reality**
- 2009/9-2014/6, School of Chemical & Biomedical Engineering, Nanyang Technological University, *Singapore*

  Ph.D. (Biomedical Engineering), Supervisors: Professor Huang Ling and Professor Song Hao
- 2005-2009, College of Chemistry, Nankai University, *China*

  Bachelor of Science

Employment

- 2022/5 – Present, Department of Electrical Engineering & Computer Science, York University, *Canada*

  Postdoctoral Visitor, **Supervisor: Professor Robert Allison**

  Topic: **Sharing in Mixed Reality**
- 2015/9-2019/4, Data Scientist, Pulse Infoframe Inc., London, ON, Canada

Teaching Experience

- 2024, LE/EECS 1015 Introduction to Computer Science and Programming, Course Director (100 registered students)
- 2023, GL/PSYC 3690 Perception, York University, Course Director
- 2023, CVR – VISTA Vision Science Summer School, lab instructor & development (40 registered students)
- 2022, CVR – VISTA Vision Science Summer School, group instructor

Services

- 2024/02 - Present, Vice Chair, IEEE Computer Society Toronto Chapter, *Canada*
- Upcoming – 2024/11, Demo for Virtual Reality Open House 2.0 hosted by International Training Centre for Authorities and Leaders (CIFAL) York
- Upcoming – 2024/11, VR demo following Visually Induced Motion Sensations
- 2023/12, Lab demo following Vision Research Conference hosted by Centre for Vision Research (CVR) and Vision: Science to Applications (VISTA)
- 2018, Reviewer: Annual Symposium AMIA

Presentations

- 2024/04, Vision Science Society Poster presentation
- 2023/03, IEEE VR Oral presentation
- 2021/05, Vision Science Society Poster presentation
- 2015/10, Canadian Conference on Dementia Poster presentation

Publications

Google Scholar: http://scholar.google.com.sg/citations?user=t8ch4nMAAAAJ&hl=en

Conference Publications

[1]. **X. Teng**, L. Wilcox, and R. Allison, “Postural Responses After Gain Adaptation in VR," 8th International Conference on Visually Induced Motion Sensations, Toronto, Canada, 2024

[2]. I. Gunasekera, **X. Teng**, F. Afolabi, R. Abadi, R. Allison, and L. Wilcox, "Perception of the Relative Size of Volumetric Shapes in Virtual Reality”, 46th European Conference on Visual Perception, Aberdeen, Scotland, 2024

[3]. **X. Teng**, L. Wilcox, and R. Allison, “Gain Adaptation in Virtual Reality," 24th Annual Meeting of the Vision Sciences Society (VSS), Florida, USA, 2024.

[4]. **X. Teng**, R. Allison, and L. Wilcox, "Increasing Parallactic Change Compresses Depth and Perceived Distance”, 23rd Scottish Vision Group (SVG), Dundee, Scotland, 2023

[5]. **X. Teng**, R. Allison, and L. Wilcox, "Manipulation of Motion Parallax Gain Distorts Perceived Distance and Object Depth in Virtual Reality," 2023 IEEE Conference Virtual Reality and 3D User Interfaces (VR), Shanghai, China, 2023.

[6]. **X. Teng**, R. Allison, and L. Wilcox, “Increasing motion parallax gain compresses space and 3D object shape”, 23rd Annual Meeting of the Vision Sciences Society (VSS), 2023.

[7]. **X. Teng**, L. M. Wilcox, and R. Allison, “Binocular cues to depth and distance enhance tolerance to visual and kinesthetic mismatch,” 22nd Annual Meeting of the Vision Sciences Society (VSS), 2022.

[8]. **X. Teng**, L. Wilcox, and R. Allison, “Interpretation of Depth from Scaled Motion Parallax in Virtual Reality,” 21st Annual Meeting of the Vision Sciences Society (VSS), 2021.

[9]. P. Dai, F. Gwadry-Sridhar, M. Bauer, M. Borrie, and **X. Teng**, “Healthy Cognitive Aging: A Hybrid Random Vector Functional-Link Model for the Analysis of Alzheimer’s Disease,” AAAI Conference on Artificial Intelligence, 2017.

[10]. **X. Teng**, P. Dai, F. Gwadry-Sridhar, and M. Borrie, "Clinical Feature vs Artificial Intelligence Feature: Risk Factor Analysis Based on Deep Learning," Alzheimer's Association International Conference (AAIC), 2016.

[11]. P. Dai, F. Gwadry-Sridhar, M. Bauer, M. Borrie, and **X. Teng**, "Longitudinal Brain Structure Changes in Healthy/MCI Patients: A Deep Learning Approach for The Diagnosis and Prognosis of Alzheimer's Disease," Alzheimer's Association International Conference (AAIC), 2016.

[12]. **X. Teng**, P. Dai, Objective Assessment of Risk Factors in Alzheimer's Disease (AD): a Novel Study Based on Artificial Neural Network, Canadian Conference on Dementia (CCD), 2015.

Journal Publications

[1]. Upcoming – **Xue Teng**, Laurie M. Wilcox, Robert S. Allison, "Dissociation between perceptual and motor adaptation of motion gain distortion"

[2]. F. Gwadry-Sridhar, H. McConkey, **X. Teng**, and D. S. Ernst, "The National Melanoma Research Registry: A Fundamental for Disease Characterization and Epidemiology," Annals of Oncology, vol. 29, p. viii460, Oct. 2018.

[3]. J. Hou, J. Dong, H. Zhu, **X. Teng**, S. Ai, and M. Mang, "A Simple and Sensitive Fluorescent Sensor for Methyl Parathion based on l-tyrosine Methyl Ester Functionalized Carbon Dots," Biosensors and Bioelectronics, vol. 68, p. 20–26, 2015.

[4]. W. Pei, B. Chen, L. Wang, J. Wu, **X. Teng**, R. Lau, L. Huang, W. Huang, "NaF-mediated Controlled-synthesis of Multicolor $NaxScF_{3+x}$:Yb/Er Upconversion Nanocrystals," Nanoscale, vol. 7, no. 9, pp. 4048–4054, 2015.

[5]. Y. Ding, **X. Teng**, H. Zhu, L. Wang, W. Pei, J. Zhu, L. Huang, W. Huang, "Orthorhombic KSc_2F_7:Yb/Er nanorods: controlled synthesis and strong red Upconversion emission," Nanoscale, vol. 5, no. 23, p. 11928, 2013.

[6]. P. Kannan, F. Rahim, **X. Teng**, R. Chen, H. Sun, L. Huang, D. Kim, "Enhanced Emission of $NaYF_4$:Yb, Er/Tm Nanoparticles by Selective Growth of Au and Ag Nanoshells," RSC Advances, vol. 3, no. 21, p. 7718, 2013.

[7]. **X. Teng** et al., "Lanthanide-Doped $NaxScF_{3+x}$ Nanocrystals: Crystal Structure Evolution and Multicolor Tuning," J. Am. Chem. Soc., vol. 134, no. 20, pp. 8340–8343, May 2012.

[8]. W. Wei, T. He, **X. Teng**, S. Wu, L. Ma, H. Zhang, J. Ma, Y. Yang, H. Chen, Y. Han, H. Sun, L. Huang, "Nanocomposites of Graphene Oxide and Upconversion Rare-earth Nanocrystals with Superior Optical Limiting Performance," Small, vol. 8, no. 14, pp. 2271 – 2276, Apr. 2012.

[9]. Y. Yang, Q. Shao, R. Deng, C. Wang, **X. Teng**, K. Cheng, Z. Cheng, L. Huang, Z. Liu, X. Liu, B. Xing, "In Vitro and In Vivo Uncaging and Bioluminescence Imaging by Using Photocaged Upconversion Nanoparticles," Angewandte Chemie International Edition, vol. 51, no. 13, pp. 3125–3129, Jan. 2012.

Grants

Title: Distortions in virtual environments
Funder: Natural Sciences and Engineering Research Council of Canada (NSERC)
Amount: 425,601
People: Laurie Wilcox (PI), Robert Allison (Co-PI), Xue Teng (Master's student)

Title: Nonlinear analysis of the effects of vision on postural stability
Funder: Vision: Science to Applications (VISTA)
People: Robert Allison (PI), Taylor Cleworth (Co-PI), Stephen Palmisano (Collaborative Partner), Jennifer Campos (Collaborative Partner), Xue Teng (Master's student)

Title: Vision requirements for emerging stereoscopic display technologies in military aviation
Funder: Canadian Institute for Military and Veteran Health Research (CIMVHR)
Amount: 147,045
People: Laurie Wilcox (PI), Robert Allison (Co-PI), Xue Teng (Master's student)

Title: Sharing Mixed Realities
Funder: NSERC – Alliance & Qualcomm Inc.
Amount: 421,000
People: Robert Allison (PI), Laurie Wilcox (Co-PI), Xue Teng (Postdoctoral Fellow)

Title: Sensitivity to and consequences of mismatches between eye separation on and interocular distance settings in VR
Funder: Meta Platforms Inc.
Amount: 247,000
People: Laurie Wilcox (PI), Robert Allison (Co-PI), Xue Teng (Postdoctoral Fellow)

Awards

- 2021, Elsevier/Vision Research Virtual Travel Award
- 2019, VISTA Trainee Scholarship for Master's student
- 2009, Nanyang Technological University, PhD fellowship with full tuition fee waiver

References

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