

# Tian (Linger) Xu

Department of Psychological and Brain Sciences  
Indiana University  
1101 E. 10th Street, Bloomington, IN 47405

Phone: +1-(812)-606-2283  
E-mail: [txu@iu.edu](mailto:txu@iu.edu)  
<http://homes.soic.indiana.edu/txu/>

## EMPLOYMENT

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**Postdoctoral Fellow** 2018-present  
*Indiana University, Bloomington, IN*  
Department of Psychological and Brain Sciences  
Advisors: Linda B. Smith & Chen Yu

## EDUCATION

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**Dual Ph.D. in Computer Science and Cognitive Science** 2018  
*Indiana University, Bloomington, IN*  
School of Informatics, Computing, and Engineering  
Dissertation Committee: Chen Yu, David Crandall, Linda B. Smith, & Selma Šabanović  
Dissertation Title: Intelligence with Interaction: Understanding Coordinated Behaviors with  
Developmental, Computational and Robotic Approaches  
Received **2020 Cognitive Science Dissertation Award**

**M.S. in Computer Science** 2012  
*Indiana University, Bloomington, IN*  
School of Informatics, Computing, and Engineering

**B.E. in Software Engineering** 2009  
*Nanjing University, Nanjing, China*  
Software Institute

## RESEARCH GRANTS

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National Institute of Child Health and Human Development (NICHD) Training Program in Integrative Developmental Processes (T32) 2018-2021

## PEER-REVIEWED PUBLICATIONS

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- **Xu T.L.**, de Barbaro K., Abney D.H. and Cox R.F.A. (2020) Finding Structure in Time: Visualizing and Analyzing Behavioral Time Series. *Frontiers In Psychology*. 11:1457. doi: 10.3389/fpsyg.2020.01457 (SCI, IF = 2.486)
- Yuan, L., **Xu, T. L.**, Yu, C. & Smith, L. B. (2019) Sustained Visual Attention is More Than Seeing. *Journal of Experimental Child Psychology*, 179, 324-336. PMID: 30579246 (SCI, IF = 2.865)
- Slone, L. K., Abney, D. H., Borjon, J. I., Chen, C. h., Franchak, J. M., Percy, D., Suarez-Rivera, C., **Xu, T. L.**, Zhang, Y., Smith, L. B., Yu, C. (2018) Gaze in Action: Head-mounted Eye Tracking of Children's Dynamic Visual Attention During Naturalistic Behavior. *JoVE (Journal of Visualized Experiments)*, (141), e58496., doi:10.3791/58496 (SCI, IF = 1.1281)
- **Xu, T.L.**, Abney, D.H. & Yu, C. (2017). Discovering Multicausality in the Development of Coordinated Behavior. *Proceedings of the 39th Annual Meeting of the Cognitive Science Society*. Austin, TX: Cognitive Science Society. (Oral presentation acceptance rate 29%)

- Yuan L., **Xu, T.L.**, Yu, C. & Smith, L.B. (2017). Seeing Is Not Enough for Sustained Visual Attention. *Proceedings of the 39th Annual Meeting of the Cognitive Science Society*. Austin, TX: Cognitive Science Society. (Oral presentation acceptance rate 29%)
- **Xu, T.** & Yu, C. (2016) Quantifying Joint Activities using Cross-Recurrence Block Representation. Papafragou, A., Grodner, D., Mirman, D., & Trueswell, J.C. (Eds.) *Proceedings of the 38th Annual Meeting of the Cognitive Science Society*, (pp. 1997-2002). Austin, TX: Cognitive Science Society. (Oral presentation acceptance rate 34%)
- **Xu, T.L.**, Zhang, H. & Yu, C. (2016). See You See Me: The Role of Eye Contact in Multimodal Human-Robot Interaction. *ACM Transactions on Interactive Intelligent Systems*, 6(1), 2. (SJR = 0.715)
- Yu, C., **Xu, T.**, Zhong, Y. & Zhang, H. (2014). Learning to interact and interacting to learn: Active statistical learning in human-robot interaction. In *Neural Networks (IJCNN), 2014 International Joint Conference on* (pp. 684-691). IEEE.
- **Xu, T.**, Zhang, H., & Yu, C. (2013). Cooperative gazing behaviors in human multi-robot interaction. *Interaction Studies*, 14(3), 390-418. (SCI, IF = 1.173)
- Yu, C., Yurovsky, D. & **Xu, T.L.** (2012). Visual Data Mining: An Exploratory Approach to Analyzing Temporal Patterns of Eye Movements. *Infancy*, 17(1), 33-60. (SCI, IF = 2.450)
- **Xu, T.**, Yu, C. & Smith, L.B. (2011). It's the Child's Body: The Role of Toddler and Parent in Selecting Toddler's Visual Experience. In *Proceedings of IEEE 10th International Conference in Development and Learning and Epigenetic Robotics (ICDL-EpiRob 2011)*.

## PUBLICATIONS IN PREPARATION

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- **Xu T.L.**, Smith, L. B. & Yu, C. (in prep) The Development of Parent-Infant Coordination: Becoming One Dynamic System
- **Xu T.L.**, Abney, D. H., & Yu, C. (in prep) Multivariate Time Series Analysis with Cross Recurrence Block Quantification Analysis
- **Xu T.L.**, Abney, D. H., Foster, S., Smith, L. B. & Yu, C. (in prep) Quantifying Relations among Multiple Behaviors in Time: Application of Granger Causality in Behavioral Psychology

## INVITED TALKS AND ORGANIZED WORKSHOPS

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- **Xu, T.L.** (March 2019). Discovering Temporal Dependency and Directional Influence among Multimodal Behavioral Variables with Granger Causality. *The 2019 Society for Research in Child Development (SRCD) Biennial Meeting*, Baltimore, MD, USA.
- **Xu, T.L.**, de Barbaro, K. & Cox, R.F.A. (July 2018). Finding Structure in Time. *The 21<sup>st</sup> International Congress of Infant Studies*. Philadelphia, PA, USA.
- **Xu, T.L.**, Abney, D.H. Smith, L.B. & Yu, C. (July 2018). New Technology Leads to New Discoveries: A Case Study of Using Computational Algorithms to Understand Parent-Infant Interaction. *The 21<sup>st</sup> International Congress of Infant Studies*. Philadelphia, PA, USA.
- **Xu, T.L.**, Abney, D.H. & Yu, C. (July 2017). Discovering Multicausality in the Development of Coordinated Behavior. *The 39th Annual Meeting of the Cognitive Science Society*. London, England, UK.
- **Xu, T.L.**, (May 2017) Investigating Social Contingencies and Temporal Patterns in Multimodal Coordinated Behaviors. *Cognitive Interaction Technology Workshop*. Bloomington, IN, USA.
- **Xu, T.L.** & Yu, C. (August 2016). Quantifying Joint Activities using Cross Recurrence Block Representation. *The 38th Annual Meeting of the Cognitive Science Society*. Philadelphia, PA, USA.

## ACADEMIC HONORS AND AWARDS

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- Cognitive Science Dissertation Award, Cognitive Science Program, Indiana University, Bloomington, IN, U.S. 2020
- Outstanding Research Award, Cognitive Science Program, Indiana University, Bloomington, IN, U.S. 2019
- The International Congress of Infant Studies (ICIS) Graduate Student Travel Award, Philadelphia, PA, U.S. 2018
- The IUB Provost's Travel Award for Women in Science, Bloomington, IN, U.S. 2017
- The Robert J. Glushko and Pamela Samuelson Foundation Student Travel Award, London, England, U.K. 2017
- The Robert J. Glushko and Pamela Samuelson Foundation Student Travel Award, Philadelphia, PA, U.S. 2016
- Best Poster Award, Summer School on Social Human-Robot Interaction, Cambridge, England, U.K. 2013
- Outstanding Graduates, Nanjing University (Top 5% Students), Nanjing, China 2009
- 1<sup>st</sup> Place, 2008 Programming Competition, Software Institute, Nanjing University, Nanjing, China 2008

## TEACHING

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### Research Mentor, Indiana University

- P397 Supervised Research FALL 2018-PRESENT

### Guest Lecturer, Indiana University

- P657 Machine Learning in Cognitive Science SPRING 2017

### Associate Instructor, Indiana University

- B649 Cloud Computing SPRING 2015
- B649 Cloud Computing SPRING 2014
- B555 Machine Learning SPRING 2013
- B461 Database Concepts SPRING 2012
- B565 Data Mining SPRING 2011
- A348/B548 Mastering the World Wide Web SPRING 2010
- A201 Introduction to Programming in Python FALL 2010, SUMMER 2010, FALL 2009

## MENTORSHIP

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### Indiana University

- Katherine Long, currently undergrad major in Psychology, Indiana University FALL 2018- FALL 2019
- Alec Fumurescu, currently undergrad major in Psychology, UT Austin FALL 2018