Tian Linger Xu

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RESEARCH INTEREST

Cognitive Development, Statistical Learning, Interpersonal Coordination, Time Series Analysis, Multivariate Analysis, Human-Robot Interaction, Assistive Social Robots

EMPLOYMENT

Postdoctoral Researcher   2018-present
Indiana University, Bloomington, IN
Department of Psychological and Brain Sciences

EDUCATION

Dual Ph.D. in Computer Science and Cognitive Science   2018
Indiana University, Bloomington, IN
Luddy School of Informatics, Computing, and Engineering and Cognitive Science Program
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

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

PEER-REVIEWED PUBLICATIONS

- Zettersten, M., Bergey, C. A., Bhatt, N., Boyce, V., Braginsky, M., Carstensen, A., deMayo, B., Kachergis, G., Lewis, M., Long, B., MacDonald, K., Mankewitz, J., Meylan, S. C., Saleh, A. N., Schneider, R. M., Tsui, A., Uner, S., **Xu, T. L.,** Yurovsky, D., & Frank, M. C. (2021*).* Peekbank: Exploring children's word recognition through an open, large-scale repository for developmental eye-tracking data. *In Proceedings of the Annual Meeting of the Cognitive Science Society* (Vol. 43, No. 43).

- **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

- 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

- Slone, L. K., Abney, D. H., Borjon, J. I., Chen, C. h., Franchak, J. M., Pearcy, 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

- **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.

- 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.

- 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.

- **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 & UNDER REVIEW

- Zettersten, M., Yurovsky, D., **Xu, T. L.**, Uner, S., Tsui, A., Schneider, R. M., ... & Frank, M. C. (2022). Peekbank: An open, large-scale repository for developmental eye-tracking data of children's word recognition. *PsyArXiv*.

- **Xu T.L.**, Abney, D. H., Smith, L. B., & Yu, C. (in prep) From Discoordination to A Single System: Developmental Changes in Parent-Infant Social Interaction

- **Xu T.L.**, Abney, D. H., & Yu, C. (in prep) Topic Modeling in Multivariate Time Series with Cross Recurrence Block Quantification Analysis

- **Xu T.L.**, Abney, D. H., Foster. S., & Yu, C. (in prep) Quantifying Relations among Multiple Behaviors in Time: Application of Granger Causality in Behavioral Psychology

INVITED TALKS AND ORGANIZED WORKSHOPS

- Zettersten, M., Saleh, A., Bhatt, N., Yurovsky, D., **Xu, T. L.,** Uner, S., Tsui, A., Schneider, R. M., Meylan, S. C., Marchman, V., Mankewitz, J., MacDonald, K., Long, B., Lewis, M., Kachergis, G., deMayo, B., Carstensen, A.S.T., Braginsky, M., Boyce, V., Bergey, C., & Frank, M. C. (Nov. 2021). Increases in speed and accuracy of children's online word recognition measured via a large-scale, open database of developmental eye-tracking data. *BUCLD 46*.

- **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 21st 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 21st 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

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
1st Place, 2008 Programming Competition, Software Institute, Nanjing University, Nanjing, China	2008

TEACHING

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

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