



Tian Tan

Research Engineer

Wu Tsai Human Performance Alliance

Bio

ACADEMIC APPOINTMENTS

- Research Engineer, Wu Tsai Human Performance Alliance
- Member, Wu Tsai Human Performance Alliance

LINKS

- Personal Site: <https://tian-a-tan.github.io/>

Publications

PUBLICATIONS

- **GaitDynamics: a generative foundation model for analyzing human walking and running.** *Nature biomedical engineering*
Tan, T., Van Wouwe, T., Werling, K. F., Liu, C. K., Delp, S. L., Hicks, J. L., Chaudhari, A. S.
2026
- **AddBiomechanics Dataset: Capturing the Physics of Human Motion at Scale.** *Computer vision - ECCV ... : ... European Conference on Computer Vision : proceedings. European Conference on Computer Vision*
Werling, K., Kaneda, J., Tan, T., Agarwal, R., Skov, S., Van Wouwe, T., Uhlich, S., Bianco, N., Ong, C., Falisse, A., Sapkota, S., Chandra, A., Carter, et al
2025; 15146: 490-508
- **Self-Supervised Learning Improves Accuracy and Data Efficiency for IMU-Based Ground Reaction Force Estimation.** *IEEE transactions on bio-medical engineering*
Tan, T., Shull, P. B., Hicks, J. L., Uhlich, S. D., Chaudhari, A. S.
2024; PP
- **A scoping review of portable sensing for out-of-lab anterior cruciate ligament injury prevention and rehabilitation.** *NPJ digital medicine*
Tan, T., Gatti, A. A., Fan, B., Shea, K. G., Sherman, S. L., Uhlich, S. D., Hicks, J. L., Delp, S. L., Shull, P. B., Chaudhari, A. S.
2023; 6 (1): 46
- **IMU and Smartphone Camera Fusion for Knee Adduction and Knee Flexion Moment Estimation During Walking** *IEEE TRANSACTIONS ON INDUSTRIAL INFORMATICS*
Tan, T., Wang, D., Shull, P. B. B., Halilaj, E.
2023; 19 (2): 1445-1455
- **Effects of IMU Sensor-to-Segment Misalignment and Orientation Error on 3-D Knee Joint Angle Estimation** *IEEE SENSORS JOURNAL*
Fan, B., Li, Q., Tan, T., Kang, P., Shull, P. B.
2022; 22 (3): 2543-2552
- **Transfer Learning Improves Accelerometer-Based Child Activity Recognition via Subject-Independent Adult-Domain Adaption.** *IEEE journal of biomedical and health informatics*
Li, J., Kang, P., Tan, T., Shull, P. B.

2021; PP

- **Accurate Impact Loading Rate Estimation During Running via a Subject-Independent Convolutional Neural Network Model and Optimal IMU Placement** *IEEE JOURNAL OF BIOMEDICAL AND HEALTH INFORMATICS*
Tan, T., Strout, Z. A., Shull, P. B.
2021; 25 (4): 1215-1222
- **Magnetometer-Free, IMU-Based Foot Progression Angle Estimation for Real-Life Walking Conditions** *IEEE TRANSACTIONS ON NEURAL SYSTEMS AND REHABILITATION ENGINEERING*
Tan, T., Strout, Z. A., Xia, H., Orban, M., Shull, P. B.
2021; 29: 282-289
- **Influence of IMU position and orientation placement errors on ground reaction force estimation** *JOURNAL OF BIOMECHANICS*
Tan, T., Chiasson, D. P., Hu, H., Shull, P. B.
2019; 97: 109416
- **Resonant Frequency Skin Stretch for Wearable Haptics.** *IEEE transactions on haptics*
Shull, P. B., Tan, T., Culbertson, H. M., Zhu, X., Okamura, A.
2019