

Zhiyi Tang

Ph.D. Student
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Objective

My research studies structural health monitoring (SHM) for civil infrastructures. I am currently interested in developing computationally efficient and statistical guaranteed methods that learn structural behavior and performance under modern deep learning architectures to meet the practical demand from large-scale multimodal SHM data processing.

Education

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| Visiting Scholar, Civil Engineering
Purdue University, West Lafayette, IN
- Co-advisor: Mohammad Reza Jahanshahi | Since October 2019 |
| Ph.D. Student, Engineering Mechanics
Harbin Institute of Technology, Harbin, China
- Advisor: Yuequan Bao | Since September 2016 |
| Master of Science, Civil Engineering
Harbin Institute of Technology, Harbin, China
- Thesis: Blind Source Separation of Bridge Multi-Vibration
- Advisor: Hui Li | Sep 2014 – July 2016 |
| Bachelor of Science, Theoretical and Applied Mechanics
Harbin Institute of Technology, Harbin, China
- Thesis: Long-Span Bridge Aerodynamic Damping Analysis
- Advisor: Hui Li | Sep 2009 – July 2013 |

Publications

1. Bao Yuequan, Chen Zhicheng, Wei Shiyin, Xu Yang, **Tang Zhiyi**, and Li Hui. "The State of the Art of Data Science and Engineering in Structural Health Monitoring." *Engineering*. 2019.
2. Bao Yuequan, **Tang Zhiyi**, Li Hui. "Compressive-Sensing Data Reconstruction for Structural Health Monitoring: A Machine-Learning Approach". *Structural Health Monitoring (SHM)*. 2019.
3. **Tang Zhiyi**, Chen Zhicheng, Bao Yuequan and Li Hui. "Convolutional neural network-based data anomaly detection method using multiple information for structural health monitoring". *Structural Control and Health Monitoring (SCHM)*. 2018.
4. Bao Yuequan, **Tang Zhiyi**, Li Hui and Zhang Yufeng. "Computer vision and deep learning-based data anomaly detection method for structural health monitoring". *Structural Health Monitoring (SHM)*. 2018.

Work / Teaching Experience

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| Asia-Pacific-Euro Summer School (APESS) on Smart Structures Technology, Qingdao, China
Volunteer | July – Aug 2018 |
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- Curriculum Planning, Daily Life Support, Final Group Project TA
(https://github.com/dawnao/APESS2018_Steel_Girder_Crack_ID_dataset)
- Manager: Hui Li

Harbin Institute of Technology, Harbin, China

Sep – Nov 2016

Teaching Assistant

- Developed course material and assignments for structural health monitoring of civil infrastructure
- Instructors: Hui Li, Yuequan Bao

Tibetan Traditional Medical College, Lahsa, China

Aug 2013 – July 2014

Volunteer Teacher

- English Teaching, Non-Profit Public Service Activities
- Manager: Tsering

Honors

- 1st Prize Innovation Scholarship of Ministry of Industry and Information Technology (teamwork, 10 persons or teams over 30000 yearly) 2019
- Excellent paper of WTC 2018 (74 over 1829): "Artificial Intelligence-based Data Anomaly Detection Method for Structural Health Monitoring", Beijing 2018
- Best Performance Award - 2nd Prize (8 groups) in APESS 2017, Yokohama 2017
- JSTI co. Structural Health Monitoring Graduate Fellowship (3 over 200+ yearly) 2016
- HIT Graduate Scholarship 2014 – 2016
- Source of Love Scholarship for Volunteers 2014
- HIT Best Thesis for Undergraduate (100 over 6,000+ yearly) 2013
- Xianzi Zeng Scholarship for distinguished undergraduates 2010 – 2013
- HIT Dong Liang Scholarship for top grades undergraduates 2010

Computer Skills

Python, MATLAB, TensorFlow, PyTorch, L^AT_EX, R, ANSYS, JavaScript, HTML, CSS, Linux, Mac

Academic Activities

- Reviewer for *Structural Health Monitoring*
- ASCE student member
- IEEE student member
- 7th World Conference on Structural Control and Monitoring, Qingdao 2018
- 11th Asia-Pacific-Europe Smart Structures Summer School, Qingdao 2018
- 1st World Transportation Convention, Beijing 2018
- 8th Cross-Strait Workshop on Civil Infrastructure Monitoring and Control, Hangzhou 2017
- 10th Asia-Pacific-Europe Smart Structures Summer School, Yokohama 2017