

Bing Zha

CONTACT

E-mail: zha.44@osu.edu
Phone: (404)901-2049
Website: <https://bing1002.github.io>

RESEARCH

The goal of my research is to develop deep learning methods that is able to learn from existing map and localize the agent using motion trajectory, and demonstrate the potential applications this will enable.

EDUCATION

The Ohio State University	2017 - Now
Ph.D. in Geoinformation and Geodetic Engineering Graduate Minor in Computer Science (AI Track)	
Chinese Academy of Surveying and Mapping	2015 - 2017
M.S. in Photogrammetry and Remote Sensing	
University of Chinese Academy of Sciences	2014 - 2015
First-year Master in Photogrammetry and Remote Sensing	
Beijing University of Civil Engineering and Architecture	2010 - 2014
B.S. in Geographic Information System (GIS)	

RESEARCH PROJECTS

Map Learning for Localization using Deep Learning Methods

- Globally topological localization and map matching using OpenStreetMap(OSM) through deep learning methods

Multi-modal Semantic Segmentation and Data Fusion for Indoor and Outdoor Environments

- Using RGB, depth, surface normal to improve semantic segmentation accuracy using encoder-decoder convolutional neural network

Nuclear Power Plant(NPP) Time Series Data Classification

- Multivariate time series data classification using recurrent neural network

Structural Image Damage Detection

- Using ResNet and transfer learning to detect and classify damage type in the structural image and win 3rd place in Kaggle Challenge

Laboratory Earthquake Time Series Prediction

- Using LightGBM and LSTM to predict the time of next lab earthquake based on previous sequential signal data

Technology of Oblique Image Data Processing Based on Multi-angle and Multi-view Match Model

- Recovering the camera motion and sparse reconstruction using close-range image

PUBLICATIONS	<p>JOURNAL Zha, B., Zhang, L., & Ai, H. B.. The applicability of different feature extraction algorithms to camera motion estimation <i>Science of Surveying and Mapping. (2018)</i></p> <p>CONFERENCE Zha, B., Koroglu, M. T., & Yilmaz, A. Trajectory Mining for Localization using Recurrent Neural Network <i>In IEEE International Conference on CSCI. (2019)</i></p> <p>Wei, J. L., Koroglu, M. T., Zha, B., & Yilmaz, A. Pedestrian Localization on Topological Maps with Neural Machine Translation Network <i>In IEEE SENSORS. (2019)</i></p> <p>Zha, B., Yilmaz, A., & Aldemir, T. Off-site Dose Prediction for Decision Making Using Recurrent Neural Networks <i>ANS Winter Meeting & Expo. (2019)</i></p> <p>Zha, B., Bai, Y. S., Yilmaz, A., & Sezen, H.. Deep Convolutional Neural Networks for Comprehensive Structural Health Monitoring and Damage Detection <i>International Workshop on Structural Health Monitoring (SHM). (2019)</i></p> <p>Iwaszczuk, D., Koppanyi, Z., Gard, N. A., Zha, B., Toth, C., & Yilmaz, A.. Semantic Labeling of Structural Elements in Buildings by Fusing RGB and Depth Images in an Encoder-Decoder CNN Framework. <i>International Archives of the Photogrammetry, Remote Sensing & Spatial Information Sciences. (2018)</i></p> <p>BOOK CHAPTER Koppanyi, Z., Iwaszczuk, D., Zha, B., Saul, C. J., Toth, C. K., & Yilmaz, A. Multimodal Semantic Segmentation: Fusion of RGB and Depth Data in Convolutional Neural Networks <i>In Multimodal Scene Understanding (pp. 41-64). Academic Press. (2018)</i></p>
RELEVANT COURSES	<p>Computer Vision Computer Vision, Photogrammetry, Geospatial Data Structure, Image Processing</p> <p>Machine Learning/Deep Learning Machine Learning, Neural Networks, Advanced Artificial Intelligence, Computational Cognitive Neuroscience, Optimization, Probabilistic Graphical Model</p> <p>Mathematics/Statistics Mathematical Statistics, Applied Regression Analysis, Time Series Analysis, Applied Bayesian Analysis</p>
SKILLS	<p>Programming Languages: Python, C/C++, Matlab, R Operation Systems: Windows, Linux (Ubuntu)</p>