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)**
Graduate Minor in **Statistics**

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	**JOURNAL** **Zha, B.**, Zhang, L., & Ai, H. B.. The applicability of different feature extraction algorithms to camera motion estimation Science of Surveying and Mapping. (2018)

CONFERENCE

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.
International Archives of the Photogrammetry, Remote Sensing & Spatial Information Sciences. (2018)

Zha, B., Koroglu, M. T., & Yilmaz, A..
Trajectory Mining for Localization using Recurrent Neural Network
In *IEEE International Conference on CSCI. (2019)*

Wei, J. L., Koroglu, M. T., **Zha, B.**, & Yilmaz, A..
Pedestrian Localization on Topological Maps with Neural Machine Translation Network
In *IEEE SENSORS. (2019)*

Zha, B., Bai, Y. S., Yilmaz, A., & Sezen, H..
Deep Convolutional Neural Networks for Comprehensive Structural Health Monitoring and Damage Detection
International Workshop on Structural Health Monitoring (SHM). (2019)

Zha, B., Koroglu, M. T., & Yilmaz, A..
Off-site Dose Prediction for Decision Making Using Recurrent Neural Networks
ANS Winter Meeting & Expo. (2019)

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
In *Multimodal Scene Understanding* (pp. 41-64). Academic Press. (2018)

RELEVANT COURSES	**Computer Vision** Computer Vision, Photogrammetry, Geospatial Data Structure, Image Processing

Machine Learning/Deep Learning
   Machine Learning, Neural Networks, Advanced Artificial Intelligence, Computational Cognitive Neuroscience, Optimization, Probabilistic Graphical Model

Mathematics/Statistics
   Mathematical Statistics, Applied Regression Analysis, Applied Bayesian Analysis, Design&Analysis of Experiment

SKILLS & INTERESTS	**Programming Languages:** Python, C/C++, Matlab, R
	Operation Systems: Windows, Linux (Ubuntu)
	Interests: Basketball, Travel