

Zhe Wang

CONTACT INFORMATION

4th year PhD Student
Department of Computer Science
The University of Arizona

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RESEARCH INTERESTS

Interactive Data Analysis, Data Visualization, Machine Learning

EDUCATION

The University of Arizona Tucson, AZ, USA Aug. 2014 to present

PhD Student, Department of Computer Science

- Advisor: Dr. Carlos Scheidegger
- Committee: Dr. Richard T. Snodgrass, Dr. Joshua A. Levine, Dr. Remco Chang

Chinese Academy of Sciences Beijing, China Sep. 2011 to June 2014

M.S., Institute of Computing Technology (ICT)

- Advisor: Dr. Hong Liu

Northeast Normal University Changchun, China Sep. 2007 to June 2011

B.E., College of Software Engineering

- Major: Software Engineering

RESEARCH PROJECTS

NNCubes (Nov. 2017 to present)

- Training neural networks to predict aggregational values for data visualization.

TopoCubes (Jan. 2017 to present)

- Interactive exploration of persistent homology of large datasets.

Gaussian Cubes (Sep. 2015 to Dec. 2016)

- Real-Time Modeling for Visual Exploration of Large Multidimensional Datasets.

Light Curve Visualization (May 2015 to Dec. 2015)

- Interactive visualization of astronomy light curve data.

ANTARES (Aug. 2014 to Aug. 2016)

- The Arizona-NOAO Temporal Analysis and Response to Events System
- Architecture Team Member (Aug. 2014 to Sep. 2016)
- Visualization Team Member (Aug. 2015 to present)
- Chief Programmer (Aug. 2015 to Sep. 2016)

Obstacle Avoidance System for the Blind (June 2012 to May 2014)

- M.S. Thesis Project
- An electronic travel aid to help the visually impaired walk safely using RGB-D sensors

Crowd Density Estimation (Sep. 2011 to June 2012)

- Proposed a novel feature for crowd density estimation: the Local Binary Pattern Co-Occurrence Matrix

PUBLICATIONS

- [1] **Zhe Wang**, Dylan Cashman, Mingwei Li, Jixian Li, Matthew Berger, Joshua A. Levine, Remco Chang, and Carlos Scheidegger. NNCubes: Learned Structures for Visual Data Exploration. *arXiv:1808.08983*

- [2] **Zhe Wang**, Nivan Ferreira, Youhao Wei, Aarthy Bhaskar, Carlos Scheidegger. Gaussian Cubes: Real-Time Modeling for Visual Exploration of Large Multidimensional Datasets. *IEEE InfoVis 2016, IEEE TVCG*.
- [3] Abhijit Saha, **Zhe Wang**, Thomas Matheson, et al. "ANTARES: Progress towards building a Broker of time-domain alerts". In: *Proc. SPIE 9910, Observatory Operations: Strategies, Processes, and Systems VI, 99100F* (July 18, 2016)
- [4] **Zhe Wang**, Hong Liu, Xiangdong Wang, and Yueliang Qian. Segment and Label Indoor Scene based on RGB-D for the Visually Impaired. In: *International Conference on Multimedia Modeling(MMM)*, 2014.
- [5] Hong Liu, **Zhe Wang**, Xiangdong Wang, Guoying Zhao, and Yueliang Qian. Adaptive Scene Segmentation and Obstacle Detection for the Blind. *Journal of Computer-Aided Design and Computer Graphics(JCAD)*, 25(12), 1818-1825, 2013.
- [6] **Zhe Wang**, Hong Liu, Yueliang Qian, and Tao Xu. Real-Time Plane Segmentation and Obstacle Detection of 3D Point Clouds for Indoor Scenes. In: *The 2nd Workshop on Consumer Depth Cameras for Computer Vision, in conjunction with European Conference on Computer Vision (ECCV)*, 2012.
- [7] **Zhe Wang**, Hong Liu, Yueliang Qian, and Tao Xu. Crowd Density Estimation Based On Local Binary Pattern Co-Occurrence Matrix. In: *the 2nd IEEE International Workshop on Advances in Automated Multimedia Surveillance for Public Safety, in conjunction with IEEE International Conference on Multimedia and Expo (ICME)*, 2012.
- [8] Tao Xu, Hong Liu, Yueliang Qian and **Zhe Wang**. A Fast and Roust Pedestrian Detection Framework based on Static and Dynamic Information. In: *IEEE International Conference on Multimedia and Expo (ICME)*. 2012.

WORK
EXPERIENCE

AT&T Labs

NYC, USA

- Research Intern

May 2017 to July 2017

AWARDS

- Graduate College Fellowship, University of Arizona (2017)
- Dongshi Medal, NENU (**top 38** students of the university) (2011)
- National Second Prize in Microsoft Imagine Cup Software Design (**top 3** projects in China) (2010)
- National Second Prize in Microsoft Imagine Cup Multipoint Education Award (**top 2** projects in China) (2009)
- Presidential Scholarship, NENU (**top 1%** students) (2008, 2009, 2010, 2011)

SKILLS

Programming Language: Python, C/C++, Javascript, SQL,

Library and Tools: D3, React.js, Numpy, Scipy, OpenCV, PCL, Matplotlib