

Zhenxiao Liang

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EDUCATION

University of Texas at Austin, Austin, Texas, United States

Computer Science Ph.D Student

Sep 2018 – Present

- Supervised by [Qixing Huang](#).

Tsinghua University, Beijing, China

B.Eng. in Institute for Interdisciplinary Information Science (**Yao Class**)

Aug 2014 – Jun 2018

- Grades of Selected Courses: Calculus I/II: 98/93 Linear Algebra I/II: 96/99
Introduction to Complex Function: 98 Theory of Computation: 94 Introduction to Data Science: 90

PUBLICATIONS

CONFERENCES

- [1] Xiangru Huang and [Zhenxiao Liang](#), Bajaj Chandrajit and Qixing Huang, “Translation Synchronization via Truncated Least Squares”, in *NIPS 2017*, Long Beach, USA, Dec 2017.
- [2] Chandrajit Bajaj, Tingran Gao, Zihang He and Qixing Huang, [Zhenxiao Liang](#), “SMAC: Simultaneous Mapping and Clustering Using Spectral Decompositions”, in *ICML 2018*, Long Beach, USA, Jun 2018.
- [3] Yifan Sun, [Zhenxiao Liang](#), Xiangru Huang and Qixing Huang, “Joint Map and Symmetry Synchronization”, in *ECCV 2018*, Munich, Germany ECCV, Sep 2018.

[Google Scholar Link](#)

RESEARCH EXPERIENCE

Translation Synchronization via Truncated Least Squares

Mar 2017– Jun 2017

University of Texas, Austin | Research Intern | Advisor: Qixing Huang (Assistant Professor)

- Introduced a robust algorithm, TranSync, for the 1D translation synchronization problem, in which the aim is to recover the global coordinates of a set of nodes from noisy measurements of relative coordinates along an observation graph.
- My main contribution was to prove the theoretical guarantees for validity of algorithm in the deterministic situation.

Simultaneous Mapping and Clustering Using Spectral Decompositions (SMAC for short)

Jun 2017 – Jan 2018

University of Texas, Austin / Tsinghua University(remotely)

Advisor: Qixing Huang (Assistant Professor) & Chandrajit Bajaj (Professor)

- Establish consistent maps across heterogeneous object collections (e.g., 2D images and 3D shapes) and do clustering simultaneously by making use of a collection of maps between objects.
- I mainly work on the theoretical part. In particular, I proved some theorems related to the stability of eigenvalues and eigenvectors for a matrix under perturbation of noise, which is the core part to guarantee the validity of algorithm. Some of them are better than state-of-the-art results.

Data-Driven Symmetry and Mapping

Sep 2017 – Jan 2018

Tsinghua University (remotely) | Advisor: Qixing Huang (Assistant Professor)

- Develop data-driven techniques that leverage the power of shape collections to improve the performance of both map computation and self-symmetry detection.
- I am mainly responsible for the theoretical proof part, in which similar framework and math tools are used as in SMAC for a quite different application. There are some extra difficulties when it comes to the case that maps are not complete.

WORK EXPERIENCE

Intern at Sensetime corporation

Jun 2016 – Dec 2016

- Did research about vehicle object recognition by deep learning.
- Got familiar with caffe framework and UNIX environment, and able to do experiments efficiently.
- Tested some popular deep learning models on real data and compared their performances

- COMPETITIONS**
- 2013 Chinese Mathematical Olympiad (CMO), China
Golden Medal (Rank 10th out of about 300 competitors) Dec 2013
 - 2012 National Olympiad in Informatics (NOI), China
Bronze Medal Aug 2012
- SKILLS**
- Programming Languages: Python (skilled), Java, Scala, C/C++
 - Mathematical Tools: MATLAB, Mathematica, R
 - Typesetting Tools: \LaTeX (skilled), Microsoft Word

[CV compiled on 2018-12-02 for Application]