

# LIANGZU PENG

[[Homepage](#)] [[OpenReview](#)] [[Google Scholar](#)] [[lpeng25@jhu.edu](mailto:lpeng25@jhu.edu)] [+1 (667) 910 4063]

## EDUCATION

- Johns Hopkins University*, Baltimore, USA Aug. 2021 - Now  
 Ph.D. in Electrical and Computer Engineering (advisor: Professor René Vidal)  
 Thesis: TBD
- ShanghaiTech University*, Shanghai, China Sep. 2017 - Jun. 2021  
 M.S. in Computer Science (advisor: Professor Manolis C. Tsakiris)  
 Thesis: From Linear Regression Without Correspondences to Homomorphic Sensing
- Zhejiang University*, Hangzhou, China Sep. 2013 - Jun. 2017  
 B.Eng. in Measurement Control Technology and Instruments  
 Thesis: Image Measurement Software for Visual Detection

## PUBLICATION

### Submitted.

1. Global Linear and Local Superlinear Convergence of IRLS for Non-Smooth Robust Regression  
**Liangzu Peng**, C. Kümmerle, and R. Vidal  
[\[OpenReview\]](#) [\[arXiv\]](#) [\[bib\]](#)

### Conference Papers.

1. [ECCV 2022] Semidefinite Relaxations of Truncated Least-Squares in Robust Rotation Search: Tight or Not  
**Oral Presentation**, 158/5803 $\approx$ 2.7% acceptance rate  
**Liangzu Peng**, Mahyar Fazlyab, and Rene Vidal  
[\[arXiv\]](#) [\[bib\]](#)
2. [CVPR 2022] ARCS: Accurate Rotation and Correspondence Search  
**Oral Presentation**, 342/8161 $\approx$ 4.2% acceptance rate  
**Liangzu Peng**, Manolis C. Tsakiris, and Rene Vidal  
[\[arXiv\]](#) [\[code\]](#) [\[bib\]](#) [\[talk video\]](#)
3. [NeurIPS 2021] Unlabeled Principal Component Analysis  
 Yunzhen Yao, **Liangzu Peng**, and Manolis C. Tsakiris  
[\[OpenReview\]](#) [\[arXiv\]](#) [\[bib\]](#) [\[code\]](#)
4. [ICML 2021] Homomorphic Sensing: Sparsity and Noise  
**Liangzu Peng**, Boshi Wang, and Manolis C. Tsakiris  
[\[pdf\]](#) [\[bib\]](#)
5. [ISIT 2021] Unsigned Matrix Completion  
 Yunzhen Yao, **Liangzu Peng**, and Manolis C. Tsakiris  
[\[pdf\]](#) [\[bib\]](#)
6. [ICML 2019] Homomorphic Sensing  
 Manolis C. Tsakiris and **Liangzu Peng**  
[\[arXiv\]](#) [\[bib\]](#)
7. [ICASSP 2019] Algebraically-Initialized Expectation Maximization for Header-Free Communication  
**Liangzu Peng**, Xuming Song, Manolis C. Tsakiris, Hayoung Choi, Laurent Kneip, and Yuanming Shi  
[\[pdf\]](#) [\[bib\]](#)

## Journal Papers.

1. Homomorphic Sensing of Subspace Arrangements  
Applied and Computational Harmonic Analysis, 2021  
**Liangzu Peng** and Manolis C. Tsakiris  
[\[arXiv\]](#) [\[bib\]](#)
2. Linear Regression Without Correspondences via Concave Minimization  
IEEE Signal Processing Letters, 2020  
**Liangzu Peng** and Manolis C. Tsakiris  
[\[arXiv\]](#) [\[code\]](#) [\[bib\]](#)
3. An Algebraic-Geometric Approach to Linear Regression Without Correspondences  
IEEE Transactions on Information Theory, 2020  
Manolis C. Tsakiris, **Liangzu Peng**, Aldo Conca, Laurent Kneip, Yuanming Shi, and Hayoung Choi  
[\[arXiv\]](#) [\[code\]](#) [\[bib\]](#)

---

## WORK EXPERIENCE

Research Assistant - Johns Hopkins University Advisor: Professor René Vidal	Aug. 2021 - Aug. 2023
Teaching Associate - New York University, Shanghai Algorithms — lead the recitation sessions, design homework, grade assignments	Sep. 2020 - May 2021
Intern - New York University, Shanghai Discrete Mathematics — grade assignments and lead the recitation sessions Algorithms — write solutions and grade assignments	Feb. 2020 - Jun. 2020

---

## AWARDS, GRANTS, AND HONORS

Honors:	
Highlighted Reviewer @ICLR ( <a href="https://iclr.cc/Conferences/2022/Reviewers">https://iclr.cc/Conferences/2022/Reviewers</a> )	2022
Grants:	
GRO Conference Grants	June 2022
MINDS PhD Fellowship @Johns Hopkins University	Spring 2022

---

## TALKS

Semidefinite Relaxations in Robust Rotation Search: Tight or Not <a href="#">@ECCV</a> , Virtual, 2022 <a href="#">[talk video]</a> <a href="#">@ICCOPT</a> , Bethlehem, Pennsylvania, July 2022 <a href="#">[talk video]</a>
ARCS: Accurate Rotation and Correspondence Search <a href="#">@CVPR</a> , New Orleans, Louisiana, June 2022 <a href="#">[talk video]</a>

---

## PROFESSIONAL SERVICE

Reviewer:
Learning on Graphs Conference (2022)
European Conference on Computer Vision (2022)
Computer Vision and Pattern Recognition (2022)
International Conference on Learning Representations (2022)

Neural Information Processing Systems (2021, 2022)  
International Conference on Machine Learning (2021, 2022)  
zbMATH Open (2021 - Now)  
IEEE Transactions on Pattern Analysis and Machine Intelligence (1)  
IEEE Transactions on Signal Processing (1)

---

## TEACHING

### *Recitation Instructor:*

CSCI-SHU 220, Algorithms	Spring 2021, NYU-Shanghai
CSCI-SHU 220, Algorithms	Fall 2020, NYU-Shanghai
CSCI-SHU 2314, Discrete Mathematics	Spring 2020, NYU-Shanghai

### *Teaching Assistant:*

SI 232, Subspace Learning	Fall 2020, ShanghaiTech
CSCI-SHU 220, Algorithms	Spring 2020, NYU-Shanghai
MATH 2111, Topological Data Analysis	Spring 2020, ShanghaiTech
SI 232, Subspace Learning	Fall 2019, ShanghaiTech
CS 133, Advanced C++ Programming	Spring 2019, ShanghaiTech
SI 192, Applied Algebraic Geometry	Spring 2019, ShanghaiTech
SI 112, Advanced Geometry <sup>1</sup>	Spring 2018, ShanghaiTech

---

<sup>1</sup>Lecture notes available: <http://www.liangzu.org/en/ag-notes.html>