LIANGZU PENG

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

EDUCATION

Johns Hopkins Univerisity, Baltimore, USA — August 2021 - Now
Ph.D. in Electrical and Computer Engineering (advisor: Professor René Vidal)
Thesis: TBD

ShanghaiTech Univerisity, Shanghai, China — September 2017 - June 2021
M.S. in Computer Science (advisor: Professor Manolis C. Tsakiris)
Thesis: From Linear Regression Without Correspondences to Homomorphic Sensing

Zhejiang University, Hangzhou, China — September 2013 - June 2017
B.Eng. in Measurement Control Technology and Instruments
Thesis: Image Measurement Software for Visual Detection

PUBLICATION

Conference Papers.

1. [NeurIPS 2022] Global Linear and Local Superlinear Convergence of IRLS for Non-Smooth Robust Regression
   Liangzu Peng, Christian Kümmerle, and René Vidal
   [OpenReview] [arXiv] [bib]

2. [ECCV 2022] Semidefinite Relaxations of Truncated Least-Squares in Robust Rotation Search: Tight or Not
   Oral Presentation, 158/5803≈2.7% acceptance rate
   Liangzu Peng, Mahyar Fazlyab, and René Vidal
   [arXiv] [bib]

3. [CVPR 2022] ARCS: Accurate Rotation and Correspondence Search
   Oral Presentation, 342/8161≈4.2% acceptance rate
   Liangzu Peng, Manolis C. Tsakiris, and René Vidal
   [arXiv] [code] [slides] [bib] [talk video]

4. [NeurIPS 2021] Unlabeled Principal Component Analysis
   Yunzhen Yao, ***Liangzu Peng***, and Manolis C. Tsakiris
   [OpenReview] [arXiv] [bib] [code]

5. [ICML 2021] Homomorphic Sensing: Sparsity and Noise
   Liangzu Peng, Boshi Wang, and Manolis C. Tsakiris
   [pdf] [bib]

6. [ISIT 2021] Unsigned Matrix Completion
   Yunzhen Yao, ***Liangzu Peng***, and Manolis C. Tsakiris
   [pdf] [bib]

7. [ICML 2019] Homomorphic Sensing
   Manolis C. Tsakiris and ***Liangzu Peng***
   [arXiv] [bib]

8. [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 — August 2021 - August 2023
Advisor: Professor René Vidal

Teaching Associate, New York University, Shanghai — September 2020 - May 2021
Intern, New York University, Shanghai — February 2020 - June 2020

Awards, Grants, and Honors

Honors:

Highlighted Reviewer @ICLR — 2022

Grants:

GRO Conference Grants @Johns Hopkins University — June 2022
MINDS PhD Fellowship @Johns Hopkins University — Spring 2022

Talks

Rotation Search: Optimization Theory and Algorithms

@Center of Applied Mathematics, Henan University, Virtual — September 23, 2022
@Vision Lab Retreat, Johns Hopkins University — September 9, 2022
@VITA, University of Texas at Austin, Virtual [slides] — August 17, 2022

Semidefinite Relaxations in Robust Rotation Search: Tight or Not

@ECCV, Virtual — October 2022
@ICCOPT, Bethlehem, Pennsylvania [slides] — July 2022

ARCS: Accurate Rotation and Correspondence Search

@CVPR, New Orleans, Louisiana [slides] [talk video] — June 2022

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, 2023)

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[1]	Spring 2018, ShanghaiTech

[1] Lecture notes available: http://www.liangzu.org/en/ag-notes.html