

LIANGZU PENG

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EDUCATION

<i>University of Pennsylvania</i> , Philadelphia, USA Ph.D. in Electrical and System Engineering Advisor: Dr. René Vidal Thesis: TBD	August 2023 – Now
<i>Johns Hopkins University</i> , Baltimore, USA Ph.D. in Electrical and Computer Engineering Advisor: Dr. René Vidal (Transferred to UPenn)	August 2021 – August 2023
<i>ShanghaiTech University</i> , Shanghai, China M.S. in Computer Science Advisor: Dr. Manolis C. Tsakiris Thesis: From Linear Regression Without Correspondences to Homomorphic Sensing	September 2017 – June 2021
<i>Zhejiang University</i> , Hangzhou, China B.Eng. in Measurement Control Technology and Instruments Thesis: Image Measurement Software for Visual Detection	September 2013 – June 2017

WORK EXPERIENCE

<i>Research Assistant</i> , Johns Hopkins University Advisor: Dr. René Vidal	August 2021 – August 2023
<i>Teaching Associate</i> , New York University, Shanghai Instructor: Dr. Siyao Guo	September 2020 – May 2021
<i>Intern</i> , New York University, Shanghai Instructor: Dr. Irith Hartman	February 2020 – June 2020

SELECTED PUBLICATION

Preprint.

1. The Ideal Continual Learner: An Agent That Never Forgets (27 pages)
LP, Paris V. Giampouras, and René Vidal
2. Unlabeled Principal Component Analysis and Matrix Completion (34 pages)
 Yunzhen Yao, LP, and Manolis C. Tsakiris

Conference Papers.

1. On the Convergence of IRLS and Its Variants in Outlier-Robust Estimation
LP, Christian Kümmeler, and René Vidal
 [CVPR 2023]
2. Global Linear and Local Superlinear Convergence of IRLS for Non-Smooth Robust Regression
LP, Christian Kümmeler, and René Vidal
 [NeurIPS 2022, 25 pages] [OpenReview] [arXiv] [code] [bib]
3. Semidefinite Relaxations of Truncated Least-Squares in Robust Rotation Search: Tight or Not
 Oral Presentation, 158/5803≈2.7% acceptance rate
LP, Mahyar Fazlyab, and René Vidal
 [ECCV 2022, 26 pages] [arXiv] [slides] [poster] [talk video] [bib]

4. ARCS: Accurate Rotation and Correspondence Search
[Oral Presentation, 342/8161≈4.2% acceptance rate](#)
 \underline{LP} , Manolis C. Tsakiris, and René Vidal
[\[CVPR 2022, 21 pages\]](#) [\[arXiv\]](#) [\[code\]](#) [\[slides\]](#) [\[talk video\]](#) [\[bib\]](#)
5. Unlabeled Principal Component Analysis
Yunzhen Yao, \underline{LP} , and Manolis C. Tsakiris
[\[NeurIPS 2021\]](#) [\[OpenReview\]](#) [\[arXiv\]](#) [\[code\]](#) [\[bib\]](#)
6. Homomorphic Sensing: Sparsity and Noise
 \underline{LP} , Boshi Wang, and Manolis C. Tsakiris
[\[ICML 2021\]](#) [\[pdf\]](#) [\[talk video\]](#) [\[bib\]](#)
7. Homomorphic Sensing
Manolis C. Tsakiris and \underline{LP}
[\[ICML 2019\]](#) [\[arXiv\]](#) [\[code\]](#) [\[bib\]](#)

Journal Papers.

1. Homomorphic Sensing of Subspace Arrangements
Applied and Computational Harmonic Analysis, 2021
 \underline{LP} and Manolis C. Tsakiris
[\[arXiv\]](#) [\[bib\]](#)
2. Linear Regression Without Correspondences via Concave Minimization
IEEE Signal Processing Letters, 2020
 \underline{LP} 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, \underline{LP} , Aldo Conca, Laurent Kneip, Yuanming Shi, and Hayoung Choi
[\[arXiv\]](#) [\[code\]](#) [\[bib\]](#)

HONORS AND AWARDS

Honors:

Top Reviewer @NeurIPS 2022	2022
Highlighted Reviewer @ICLR 2022	2022

Awards:

The Dean's Fellowship ¹ @UPenn	August 2023 – Now
GRO Conference Grants @JHU	June 2022
MINDS PhD Fellowship @JHU	Spring 2022

TALKS

Fantastic Iteratively Reweighted Algorithms and Where to Find Them
@SIAM Conference on Optimization, Seattle, Washington

May 2023

A Tale of Two Villains: Bandit, Procrustes, and Their Regrets
TheoriNet Retreat @Flatiron Institute, New York City [\[slides\]](#)

September 28, 2022

¹“awarded to ESE PhD students in recognition of exceptional performance and potential for continued high achievement in graduate work”

Rotation Search: Optimization Theory and Algorithms

@AI TIME (Youth PhD Talk), Virtual [slides v4]

December 8, 2022

@Center for Applied Mathematics of Henan Province, China, Virtual [slides v3]

September 23, 2022

@Vision Lab Retreat, Johns Hopkins University [slides v2]

September 9, 2022

@VITA, University of Texas at Austin, Virtual [slides v1]

August 17, 2022

Semidefinite Relaxations in Robust Rotation Search: Tight or Not

@ECCV, Virtual [slides]

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

Organizer:

Mini-Symposium @SIAM Conference on Optimization
with Christian Kümmerle and René Vidal

May 2023

“Iteratively Reweighted Algorithms in Data Science: From Convexity to Nonconvexity”

Reviewer:

International Conference on Computer Vision (2023)

IEEE International Conference on Acoustics, Speech and Signal Processing (2023)

International Conference on Artificial Intelligence and Statistics (2023)

Learning on Graphs Conference (2022)

European Conference on Computer Vision (2022)

Computer Vision and Pattern Recognition (2022, 2023)

International Conference on Learning Representations (2022, 2023)

Neural Information Processing Systems (2021, 2022)

International Conference on Machine Learning (2021 – 2023)

zbMATH Open (2021 - Now)

IEEE Transactions on Pattern Analysis and Machine Intelligence (1)

IEEE Transactions on Signal Processing (1)

IEEE Robotics and Automation Letters (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 Geometry²

Spring 2018, ShanghaiTech

²Lecture notes available: <http://www.liangzu.org/en/ag-notes.html>