CHONG YOU

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EDUCATION

Johns Hopkins University, Baltimore, MD, U.S.A.

· Ph.D. in Electrical & Computer Engineering *Sep. 2012 — Oct. 2018*

Thesis: *Sparse methods for learning multiple subspaces from large-scale, corrupted and imbalanced data*
Committee: René Vidal (advisor), Daniel P. Robinson, Trac Tran, Vishal Patel, Yi Ma (UC Berkeley)
Award: MINDS Doctoral Dissertation Award to "recognize and encourage superior research on the theoretical foundations of data science by doctoral candidates at the Johns Hopkins University"

Peking University, Beijing, China

· M.S. in Electrical Engineering *Sep. 2009 — Jul. 2012*
· B.S. in Electrical Engineering *Sep. 2005 — Jul. 2009*
· B.S. in Applied Mathematics *Sep. 2006 — Jul. 2009*

WORK EXPERIENCE

Google DeepMind, NY, U.S.A.

· Senior Research Scientist *Aug. 2025 — Present*

Google Research, NY, U.S.A.

· Senior Research Scientist *Mar. 2023 — Aug. 2025*
· Research Scientist *Feb. 2021 — Apr. 2023*

University of California, Berkeley, CA, U.S.A.

· Postdoctoral Scholar (With Professor Yi Ma) *Oct. 2018 — Jan. 2021*

Google Inc., Mountain View, CA, U.S.A.

· Intern (With Dr. Jianqiao Feng) *May. 2017 — Aug. 2017*

Samsung Advanced Institute of Technology (SAIT) China, Beijing, China

· Intern (With Dr. Kuanhong Xu) *Apr. 2012 - Jun. 2012*

PUBLICATIONS

Fields: Machine learning (e.g., *ICLR*, *NeurIPS*, *ICML*, *TPAMI*), computer vision (e.g., *CVPR*, *ICCV*, *ECCV*), signal processing (e.g., *TIP*, *JSTSP*), optimization and demography.

Preprints and Technical Reports

[1] Gemini 2.5: Pushing the Frontier with Advanced Reasoning, Multimodality, LongContext, and Next Generation Agentic Capabilities.
Gemini Team, 2025

[2] Spark Transformer: Reactivating Sparsity in FFN and Attention.
Chong You*, Kan Wu*, Zhipeng Jia*, Lin Chen*, Srinadh Bhojanapalli, Jiaxian Guo, Utku Evci, Jan Wassenberg, Praneeth Netrapalli, Jeremiah J. Willcock, Suvinay Subramanian, Felix Chern, Alek Andreev, Shreya Pathak, Felix Yu, Prateek Jain, David E. Culler, Henry M. Levy, Sanjiv Kumar, 2024

[3] HiRE: High Recall Approximate Top-k Estimation for Efficient LLM Inference.
Yashas Samaga B L, Varun Yerram, Chong You, Srinadh Bhojanapalli, Sanjiv Kumar, Prateek Jain, Praneeth Netrapalli, 2024

[4] Basis Pursuit and Orthogonal Matching Pursuit for Subspace-preserving Recovery: Theoretical Analysis.
Daniel P. Robinson*, René Vidal*, Chong You*, 2020

Published Conference and Workshop Articles

[1] **[AISTATS'25]** Efficient and Asymptotically Unbiased Constrained Decoding for Large Language Models.
Haotian Ye, Himanshu Jain, Chong You, Ananda Theertha Suresh, Haowei Lin, James Zou, Felix Yu.
International Conference on Artificial Intelligence and Statistics

[2] **[ICML'24]** Generalized Neural Collapse for a Large Number of Classes.
Jiachen Jiang*, Jinxin Zhou*, Peng Wang, Qing Qu, Dustin Mixon, Chong You, Zhihui Zhu.
International Conference on Machine Learning

[3] **[ICLR'24]** It's an Alignment, Not a Trade-off: Revisiting Bias and Variance in Deep Models.
Lin Chen, Michal Lukasik, Wittawat Jitkrittum, Chong You, Sanjiv Kumar.
International Conference on Learning Representations

[4] **[ICLR'24]** Functional Interpolation for Relative Positions Improves Long Context Transformers.
Shanda Li, Chong You, Guru Guruganesh, Joshua Ainslie, Santiago Ontanon, Manzil Zaheer, Sumit Sanghai, Yiming Yang, Sanjiv Kumar, Srinadh Bhojanapalli.
International Conference on Learning Representations

[5] **[CPAL'24]** Deep Self-expressive Learning.
Chen Zhao, Chun-Guang Li, Wei He, Chong You.
Conference on Parsimony and Learning

[6] **[ICLR'23]** Teacher Guided Training: An Efficient Framework for Knowledge Transfer.
Manzil Zaheer, Ankit Singh Rawat, Seungyeon Kim, Chong You, Himanshu Jain, Andreas Veit, Rob Fergus, Sanjiv Kumar.
International Conference on Learning Representations

[7] **[ICLR'23]** The Lazy Neuron Phenomenon: On Emergence of Activation Sparsity in Transformers.
Zonglin Li*, Chong You*, Srinadh Bhojanapalli, Daliang Li, Ankit Singh Rawat, Sashank J. Reddi, Ke Ye, Felix Chern, Felix Yu, Ruiqi Guo, Sanjiv Kumar.
International Conference on Learning Representations

[8] **[NeurIPS'22]** Revisiting Sparse Convolutional Model for Visual Recognition.
Xili Dai, Mingyang Li, Pengyuan Zhai, Shengbang Tong, Xingjian Gao, Shao-Lun Huang, Zhihui Zhu, Chong You, Yi Ma.
Neural Information Processing Systems

[9] **[NeurIPS'22]** Are All Losses Created Equal: A Neural Collapse Perspective.
Jinxin Zhou, Chong You, Xiao Li, Kangning Liu, Sheng Liu, Qing Qu, Zhihui Zhu.
Neural Information Processing Systems

[10] **[ICML'22]** Robust Training under Label Noise by Over-parameterization.
Sheng Liu, Zhihui Zhu, Qing Qu, Chong You.
International Conference on Machine Learning

[11] **[ICML'22]** On the Optimization Landscape of Neural Collapse under MSE Loss: Global Optimality with Unconstrained Features.
Jinxin Zhou, Xiao Li, Tianyu Ding, Chong You, Qing Qu, Zhihui Zhu.
International Conference on Machine Learning

[12] **[NeurIPS'21]** A Geometric Analysis of Neural Collapse with Unconstrained Features.
Zhihui Zhu*, Tianyu Ding*, Jinxin Zhou, Xiao Li, Chong You, Jeremias Sulam, Qing Qu.
Neural Information Processing Systems **[Spotlight presentation with acceptance rate** 3%]

[13] **[NeurIPS'21]** Convolutional Normalization: Improving Deep Convolutional Network Robustness and Training.
Sheng Liu*, Xiao Li*, Yuexiang Zhai, Chong You, Zhihui Zhu, Carlos Fernandez-Granda, Qing Qu.
Neural Information Processing Systems

[14] **[ICML'21]** A Nullspace Property for Subspace-Preserving Recovery.
Mustafa Devrim Kaba, Chong You, Daniel P. Robinson, Enrique Mallada, and René Vidal.
International Conference on Machine Learning

[15] **[CVPR'21]** Learning a Self-Expressive Network for Subspace Clustering.
Shangzhi Zhang, Chong You, René Vidal, Chun-Guang Li.
IEEE Conference on Computer Vision and Pattern Recognition

[16] **[CVPR'21]** Incremental Learning via Rate Reduction.
Ziyang Wu*, Christina Baek*, Chong You, Yi Ma.
IEEE Conference on Computer Vision and Pattern Recognition, also at
ICML 2021 Workshop on Theory and Foundation of Continual Learning

[17] **[ICLR'21]** A Critique of Self-expressive Deep Subspace Clustering.
Benjamin Haeffele, Chong You, René Vidal.
International Conference on Learning Representations

[18] **[NeurIPS'20 Workshop]** Deep Networks from the Principle of Rate Reduction.
Ryan Chan*, Yaodong Yu*, Chong You*, Haozhi Qi, John Wright, Yi Ma.
Beyond Backprop Workshop at Neural Information Processing Systems

[19] **[NeurIPS'20]** Robust Learning via Implicit Bias of Discrepant Learning Rates for Double Over-parameterization.
Chong You*, Zhihui Zhu*, Qing Qu, Yi Ma.
Neural Information Processing Systems **[Spotlight presentation with acceptance rate** 4%]

[20] **[NeurIPS'20]** Learning Diverse and Discriminative Representations via the Principle of Maximal Coding Rate Reduction.
Yaodong Yu*, Ryan Chan*, Chong You, Chaobing Song, Yi Ma.
Neural Information Processing Systems

[21] **[ICML'20]** Rethinking Bias-Variance Trade-off for Generalization of Neural Networks.
Zitong Yang*, Yaodong Yu*, Chong You, Jacob Steinhardt, Yi Ma.
International Conference on Machine Learning

[22] **[ICML'20]** Deep Isometric Learning for Visual Recognition.
Haozhi Qi, Chong You, Xiaolong Wang, Yi Ma, Jitendra Malik.
International Conference on Machine Learning

[23] **[CVPR'20]** Stochastic Sparse Subspace Clustering.
Ying Chen, Chun-Guang Li, Chong You.
IEEE Conference on Computer Vision and Pattern Recognition

[24] **[ICCV'19]** Is an Affine Constraint Needed for Affine Subspace Clustering?
Chong You, Chun-Guang Li, Daniel P. Robinson, René Vidal.
International Conference on Computer Vision

[25] **[ICCV'19 Workshop]** Classifying and Comparing Approaches to Subspace Clustering with Missing Data.
Connor Lane, Ron Boger, Chong You, Manolis Tsakiris, Benjamin Haeffele, René Vidal.
International Workshop on Robust Subspace Learning and Applications in Computer Vision, in conjunction with International Conference on Computer Vision

[26] **[CVPR'19]** Self-Supervised Convolutional Subspace Clustering Network.
Junjian Zhang, Chun-Guang Li, Chong You, Xianbiao Qi, Honggang Zhang, Jun Guo, Zhouchen Lin.

IEEE Conference on Computer Vision and Pattern Recognition

[27] **[ECCV'18]** A Scalable Exemplar-based Subspace Clustering Algorithm for Class-Imbalanced Data.
Chong You, Chi Li, Daniel P. Robinson, René Vidal.
European Conference on Computer Vision

[28] **[CVPR'17]** Provable Self-Representation Based Outlier Detection in a Union of Subspaces.
Chong You, Daniel P. Robinson, René Vidal.
IEEE Conference on Computer Vision and Pattern Recognition
[Spotlight presentation with acceptance rate 8%]

[29] **[CVPR'16]** Scalable Sparse Subspace Clustering by Orthogonal Matching Pursuit.
Chong You, Daniel P. Robinson, René Vidal.
IEEE Conference on Computer Vision and Pattern Recognition
[Oral presentation with acceptance rate 3.9%]

[30] **[CVPR'16]** Oracle Based Active Set Algorithm for Scalable Elastic Net Subspace Clustering.
Chong You, Chun-Guang Li, Daniel P. Robinson, René Vidal.
IEEE Conference on Computer Vision and Pattern Recognition
[Oral presentation with acceptance rate 3.9%]

[31] **[ICML'15]** Geometric Conditions for Subspace-Sparse Recovery.
Chong You, René Vidal.
International Conference on Machine Learning

[32] **[SPARS'15]** On Sufficient Conditions for Affine Sparse Subspace Clustering.
Chun-Guang Li, Chong You, René Vidal.
Signal Processing with Adaptive Sparse Structured Representations

[33] **[SPARS'15]** Geometric Conditions for Subspace-Sparse Recovery.
Chong You, René Vidal.
Signal Processing with Adaptive Sparse Structured Representations.

Published Journal Articles

[1] **[JMLR]** Recovery and Generalization in Over-Realized Dictionary Learning.
Jeremias Sulam, Chong You, Zhihui Zhu.
Journal of Machine Learning Research, 2022

[2] **[JMLR]** ReduNet: A White-box Deep Network from the Principle of Maximizing Rate Reduction.
Ryan Chan*, Yaodong Yu*, Chong You*, Haozhi Qi, John Wright, Yi Ma.
Journal of Machine Learning Research, 2022

[3] **[TPAMI]** Self-Representation Based Unsupervised Exemplar Selection in a Union of Subspaces.
Chong You, Chi Li, Daniel P. Robinson, René Vidal.
IEEE Transactions on Pattern Analysis and Machine Intelligence, 2022

[4] Improving Age Measurement in Low- and Middle-income Countries through Computer Vision: A Test in Senegal.
Stéphane Helleringer, Chong You, Laurence Fleury, Laetitia Douillot, Cheikh Tidiane Ndiaye, Valerie Delaunay, René Vidal.
Demographic Research, 2019 **[Editor's choice]**

[5] **[J-STSP]** On Geometric Analysis of Affine Sparse Subspace Clustering.
Chun-Guang Li*, Chong You*, René Vidal.
IEEE Journal of Selected Topics in Signal Processing, 2018

[6] A Nonconvex Formulation for Low Rank Subspace Clustering: Algorithms and Convergence Analysis.
Hao Jiang*, Daniel P. Robinson*, René Vidal*, Chong You*.
Computational Optimization and Applications, 2018

[7] **[TIP]** Structured Sparse Subspace Clustering: A Joint Affinity Learning and Subspace Clustering Framework.
Chun-Guang Li, Chong You, René Vidal.
IEEE Transactions on Image Processing, 2017

Invited Publications

[1] A Divide-and-Conquer Framework for Large-Scale Subspace Clustering.
Chong You, Claire Donnat, Daniel P. Robinson, René Vidal.
Asilomar Conference on Signals, Systems, and Computers, 2016

* asterisk indicates joint or alphabetical authorship

HONORS & AWARDS

Reviewer Awards for CVPR, ICML, NeurIPS and ICLR *2018 - 2022*
Recognized as Outstanding Reviewer for *CVPR 2019*, *CVPR 2020*, *ICLR 2021*, and *ICML 2022*; Top 5% Reviewer for *ICML 2019*; Top 200 Reviewer for *NeurIPS 2018*

MINDS Doctoral Dissertation Award *2019*
Awarded annually to one dissertation in data science at the Johns Hopkins University

Editor's Choice Award *2019*
Awarded to our paper published at Demographic Research

TECHNICAL SKILLS

Programming Language	C++, MATLAB, Python.
Tool & Software	LaTeX, JAX, PyTorch, Tensorflow, MatConvNet, OpenCV.

TALKS & PRESENTATIONS

How Many FLOPS is a Token Worth?
· *Workshop on Mathematics of Deep Learning*, Oaxaca, Mexico *Jun. 2024*

Large Models are Parsimonious Learners?
· *Google Workshop on Sparsity and Adaptive Computation* [Online] *Oct. 2022*

Deep Self-expressive Model
· *SIAM Conference on Imaging Science* [Remote] *Mar. 2022*

Robust Recovery via Double Over-parameterization
· *SIAM Conference on Mathematics of Data Science* [Remote] *Sep. 2022*
· *Communications and Signal Processing Seminar at University of Michigan*, MI, USA *Sep. 2022*
· *International Conference on Continuous Optimization*, PA, USA *Jul. 2022*
· *Advances in Neural Information Processing Systems (NeurIPS)* [Remote] *Dec. 2020*

Low-dimensional Modeling for Data-driven Learning
· *Lawrence Livermore National Laboratory* [Remote] *Nov. 2020*

Learning a Union of Subspaces from Big and Corrupted Data
· *SIAM Conference on Mathematics of Data Science* [Remote] *Jun. 2020*
· *2019 MINDS Symposium on the Foundations of Data Science*, MD, USA *Nov. 2019*
· *International Conference on Pattern Recognition (ICPR)*, Beijing, China [Remote] *Aug. 2018*
· *Center on Frontiers of Computing Studies (CFCS), Peking University*, Beijing, China *Apr. 2018*
· *Google Inc.*, CA, USA *Jun. 2017*

Self-supervised Convolutional Subspace Clustering Network

· *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, CA, USA [Poster] *Jul. 2019*

Provable Self-representation Based Outlier Detection in a Union of Subspaces

· *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, HI, USA *Jul. 2017*
· *Mid-Atlantic Computer Vision (MACV) Workshop*, PA, USA *May. 2017*

Large Scale Subspace Clustering Algorithms

· *Asilomar Conference on Signals, Systems, and Computers*, CA, USA *Nov. 2016*

Scalable Elastic-net Subspace Clustering

· *Amazon Graduate Research Symposium*, WA, USA [Poster] *Jan. 2017*
· *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, NV, USA *Jul. 2016*
· *Mid-Atlantic Computer Vision (MACV) Workshop*, MD, USA *May. 2016*

Geometric Conditions for Subspace Sparse Recovery

· *Mid-Atlantic Computer Vision (MACV) Workshop*, MD, USA [Poster] *May. 2016*
· *Signal Processing with Adaptive Sparse Structured Representations (SPARS) Workshop*, Cambridge, UK [Poster] *Jul. 2015*

ACADEMIC SERVICES

Event Organizer

· *2nd Conference on Parsimony and Learning*, Stanford *Mar. '25*
· *Conference on Parsimony and Learning*, Hong Kong *Jan. '24*
· Mini-Symposium on *Deep Learning with Low-Dimensional Models*, at *SIAM Conference on Mathematics of Data Science*, CA, USA *Sep. '22*
· The 3rd Workshop on *Seeking Low-dimensionality in Deep Neural Networks* (**SLowDNN**) *Jan. '23*
· The 2nd Workshop on *Seeking Low-dimensionality in Deep Neural Networks* (**SLowDNN**) *Nov. '21*
· Workshop on *Seeking Low-dimensionality in Deep Neural Networks* (**SLowDNN**) *Nov. '20*
· Tutorial on *Subspace Clustering: Recent Advances in Algorithms, Theories and Applications*, at *International Conference on Pattern Recognition* (**ICPR**), Beijing, China *Aug. 2018*

Conference Area Chair

· International Conference on Learning Representations (**ICLR**) *'25*
· International Conference on Machine Learning (**ICML**) *'25*

Conference Reviewer (# articles reviewed)

· IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**)	(46)	*'16 - '22*
· Neural Information Processing Systems (**NeurIPS**)	(27)	*'15, '18 - '22*
· International Conference on Machine Learning (**ICML**)	(8)	*'19 - '20, '22*
· European Conference on Computer Vision (**ECCV**)	(8)	*'18*
· International Conference on Computer Vision (**ICCV**)	(6)	*'17*
· British Machine Vision Conference (**BMVC**)	(3)	*'17*
· International Conference on Pattern Recognition (**ICPR**)	(4)	*'18, '22*
· International Conference on Learning Representations (**ICLR**)	(7)	*'20 - '22*

Journal Reviewer (# articles reviewed)

· IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**)	(12)
· IEEE Transactions on Image Processing (**TIP**)	(12)
· IEEE Transactions on Signal Processing (**TSP**)	(1)
· IEEE Transactions on Neural Networks and Learning Systems (**TNNLS**)	(1)

- IEEE Transactions on Circuits and Systems for Video Technology (**TCSVT**) (1)
- IEEE Transactions on Knowledge and Data Engineering (**TKDE**) (1)
- IEEE Transactions on Circuits and Systems (**TCAS**) II: Express Briefs (1)
- IEEE Transactions on Knowledge Discovery from Data (**TKDD**) (1)
- IEEE Access (2)
- IEEE Journal of Selected Topics in Signal Processing (**J-STSP**) (5)
- SIAM Journal on Imaging Sciences (**SIIMS**) (1)
- Journal of Machine Learning Research (**JMLR**) (2)
- Journal of Statistical Computation and Simulation (**JSCS**) (1)
- Computer Science Review (1)
- Pattern Recognition (6)
- Neurocomputing (7)

TEACHING EXPERIENCES

University of California, Berkeley

- Teaching Assistant for *High-dimensional Data Analysis with Low-dimensional Models* *Fall, 2019*

Johns Hopkins University

- Teaching Assistant for *Advanced Topics in Machine Learning* *Spring, 2016*
- Course Assistant for *Computer Vision* *Fall, 2014*

Peking University

- Teaching Assistant for *Introduction to Satellite Navigation Systems* *Fall, 2010*