BERTHY T. FENG

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EDUCATION

California Institute of Technology 2019–present
PhD candidate in Computing & Mathematical Sciences

Princeton University 2015–2019
BSE in Computer Science, *summa cum laude*
Certificate in Statistics & Machine Learning

SELECTED HONORS & AWARDS

Best Paper Finalist, CVPR 2022
NSF Graduate Research Fellowship (GRFP) 2021–2024
Kortschak Scholars Graduate Fellowship 2019–2021
Sigma Xi Book Award for Outstanding Undergraduate Research 2019
Tau Beta Pi 2018–2019

CONFERENCE PUBLICATIONS

A.C. Ogren*, **B.T. Feng***, J. Ahn, K.L. Bouman, C. Daraio. "Visual Surface Wave Elastography: Revealing Subsurface Physical Properties via Visible Surface Waves." *Proc. IEEE International Conference on Computer Vision (ICCV)*, 2025.

B.T. Feng, R. Baptista, K.L. Bouman. "Neural Approximate Mirror Maps for Constrained Diffusion Models." *Proc. International Conference on Learning Representations (ICLR)*, 2025.

H. Zheng, W. Chu, B. Zhang, Z. Wu, A. Wang, **B.T. Feng**, C. Zou, Y. Sun, N. Kovachki, Z.E. Ross, K.L. Bouman, Y. Yue. "InverseBench: Benchmarking Plug-and-Play Diffusion Models for Inverse Problems in Physical Sciences." *Proc. International Conference on Learning Representations (ICLR)*, 2025.

S. Dey, S. Saha, **B.T. Feng**, M. Cui, L. Delisle, O. Leong, L.V. Wang, K.L. Bouman. "Score-based Diffusion Models for Photoacoustic Tomography Image Reconstruction." *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, 2024. (Mentorship role.)

B.T. Feng, J. Smith, M. Rubinstein, H. Chang, K.L. Bouman, W.T. Freeman. "Score-Based Diffusion Models as Principled Priors for Inverse Imaging." *Proc. IEEE International Conference on Computer Vision (ICCV)*, 2023. (Spotlight Poster at ICCP 2023.)

B.T. Feng, A.C. Ogren, C. Daraio, K.L. Bouman. "Visual Vibration Tomography: Estimating Interior Material Properties from Monocular Video." *Proc. IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2022. (Best Poster Award at ICCP 2021. Oral Presentation and Best Paper Finalist at CVPR 2022.)

Z. Wang, **B.T. Feng**, K. Narasimhan, O. Russakovsky. "Towards Unique and Informative Captioning of Images." *Proc. European Conference on Computer Vision (ECCV)*, 2020.

B.T. Feng, Z. Jin, J. Su, A. Finkelstein. "Bandwidth Expansion Using Perceptually-Motivated Loss." *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, 2019.

JOURNAL PUBLICATIONS

B.T. Feng, K.L. Bouman, W.T. Freeman. "Event-horizon-scale Imaging of M87* under Different Assumptions via Deep Generative Image Priors." *The Astrophysical Journal (ApJ)*, 2024.

B.T. Feng, K.L. Bouman. "Variational Bayesian Imaging with an Efficient Surrogate Score-based Prior." *Transactions on Machine Learning (TMLR)*, 2024.

A.C. Ogren, **B.T. Feng**, K.L. Bouman, C. Daraio. "Gaussian process regression as a surrogate model for the computation of dispersion relations." *Computer Methods in Applied Mechanics and Engineering (CMAME)*, 2024.

Y. Sun, Z. Wu, Y. Chen, **B.T. Feng**, K.L. Bouman. "Provable Probabilistic Imaging using Score-Based Generative Priors." *IEEE Transactions on Computational Imaging (TCI)*, 2024.

INVITED TALKS

From Data-Driven to Physics-Based Priors for Next-Generation Computational Imaging

- ML4Astro Workshop Keynote (July 2025)
- CVPR Physics-inspired 3D Vision and Imaging Workshop Keynote (June 2025)

Score-based Diffusion Models as Data-driven and Physics-informed Priors

- Stanford Center for Image System Engineering (SCIEN) Seminar (November 2024)
- Carnegie Mellon University Imaging Reading Group (October 2024)
- University of Hamburg Deep Learning in Inverse Problems Workshop (September 2024)
- SIAM Imaging Sciences 2024 Deep Learning for Imaging Sciences Symposium (May 2024)

Score-based Priors for Bayesian Computational Imaging

- Caltech Computational Mathematics + X (CMX) Seminar (February 2024)
- Radboud University Astrophysics Colloquium (October 2023)
- ngEHT Algorithms, Inference, and Visualization working group (August 2023)
- Northwestern Astro + Imaging Workshop (July 2023)
- UCLA Vision Seminar (May 2023)

Visual Vibration Tomography

- CVPR Oral presentation (June 2022)
- UCLA + Caltech Computational Imaging Workshop (April 2022)
- Electronic Imaging Symposium (January 2022)
- Jiajun Wu group meeting at Stanford (April 2021)
- Yisong Yue group meeting at Caltech (April 2021)
- Northwestern Computational Photography (February 2021)

ACADEMIC SERVICE

Organizer *Quo Vadis, Computer Vision?* workshop at ICCV 2023
Reviewer CVPR, ICCV, ECCV, NeurIPS, IEEE TMI, ACCV, AAAI, ICLR, ICML, IEEE TCI

TEACHING

Teaching Assistant	CS 166: Computational Cameras, Caltech	2024
Teaching Assistant	CS 101C: Machine Learning Projects, Caltech	2022, 2023
Volunteer Tutor	Caltech Y	2019
Lab TA	SML 201: Intro to Data Science, Princeton	2019
Teaching Assistant	IW06: Deep Learning for Audio Synthesis, Princeton	2018
Lab TA & Grader	Introductory CS Courses, Princeton	2018
Tutor	Princeton McGraw Center for Teaching & Learning	2017–2018

MENTORSHIP

Christina Liu — SURF	2024
Ayush Varney — undergraduate research	2023–present
Sreemanti Dey — SURF & undergraduate research (now PhD student at Princeton)	2022–2024
Snigdha Saha — undergraduate research (now master's student at CMU)	2022–2024
James Bowden — undergraduate research (now PhD student at UC Berkeley)	2022