Edric (Ed) Tam

CONTACT INFORMATION

Stanford University
Department of Biomedical Data Science
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Google Scholar: Link
Github: Link
LinkedIn: Link

CITIZENSHIP

USA (born in Los Angeles, California)

RESEARCH INTERESTS

Bayesian Statistics, Deep Learning, Generative Modeling, Markov Chain Monte Carlo, AI-Assisted Statistical Inference, Graphs and Networks, Embeddings, Applications in Neuroscience, Biomedicine and Econometrics.

EDUCATION AND TRAINING

Stanford University, Stanford, CA

Postdoctoral Fellow in Biomedical Data Science, September 2024 - present

- Croucher Foundation Postdoctoral Fellowship (2025-2027)
- Warren Alpert Postdoctoral Fellowship in AI and Computational Biology (2024-2025)
- Advisor: Barbara E. Engelhardt

Duke University, Durham, NC

Ph.D in Statistical Science, August 2018 - August 2024

- Thesis: *Graphical and Isoperimetric Perspectives on Sampling and Regularization*
- Advisor: David B. Dunson
- Committee: Amy Herring, Peter D. Hoff, Jason Xu

The University of Chicago, Chicago, IL

M.S. in Computer Science, September 2017 - June 2018

- Advisor: Veronika Ročková

Yale University, New Haven, CT

M.S. in Biomedical Engineering, August 2016 - May 2017

- Advisor: John R. Carlson

Johns Hopkins University, Baltimore, MD

B.S. in Biomedical Engineering, Neuroscience, Applied Mathematics and Statistics, August 2012 - May 2016

- Graduated with General Honors and Departmental Honors.
- Minor: Computational Medicine
- Advisors: Alex L. Kolodkin, Michael I. Miller, J. Tilak Ratnanather

PREPRINTS

[1] E. Calvo-Roitberg, J. W. Lehman, E. Tam, S. Elhajjajy, B. E. Engelhardt, and A. A. Pai, "Spark: In silico simulations for benchmarking nascent rna sequencing experiments," *bioRxiv (Submitted to Nature Methods)*, 2025.

[2] E. Tam and D. B. Dunson, "On the statistical capacity of deep generative models," *arXiv preprint arXiv:2501.07763 (Under revision at Biometrika)*, 2025.

[3] E. Tam and B. E. Engelhardt, "A distributional evaluation of generative image models," *arXiv preprint arXiv:2501.00744 (Under review at Annals of Applied Statistics)*, 2025.

[4] E. Tam and D. Dunson, "Spectral gap regularization of neural networks," *arXiv preprint arXiv:2304.03096 (revision at JMLR)*, 2023.

[5] E. Tam and D. Dunson, "Multiscale graph comparison via the embedded laplacian discrepancy," *arXiv preprint arXiv:2201.12064 (Submitted to JMLR)*, 2022.

Peer Reviewed Journal Publications

[6] E. Tam, D. B. Dunson, and L. L. Duan, "Exact sampling of spanning trees via fast-forwarded random walks," *Biometrika, asaf031*, 2024.

[7] J. T. Ratnanather, R. Bhattacharya, M. B. Heston, *et al.*, "An mhealth app (speech banana) for auditory training: App design and development study," *JMIR mHealth and uHealth*, vol. 9, no. 3, e20890, 2021.

[8] S. I. Khalid, R. Kelly, O. Adogwa, *et al.*, "Pediatric brainstem gliomas: A retrospective study of 180 patients from the seer database," *Pediatric neurosurgery*, pp. 1–14, 2019.

[9] R. M. Joseph, J. S. Sun, E. Tam, and J. R. Carlson, "A receptor and neuron that activate a circuit limiting sucrose consumption," *Elife*, vol. 6, e24992, 2017.

[10] R. A. Hand, S. Khalid, E. Tam, and A. L. Kolodkin, "Axon dynamics during neocortical laminar innervation," *Cell reports*, vol. 12, no. 2, pp. 172–182, 2015.

[11] K. Tang, W. Sharpe, A. Schulz, *et al.*, "Determining bruise etiology in muscle tissue using finite element analysis," *Journal of forensic sciences*, vol. 59, no. 2, pp. 371–374, 2014.

Peer Reviewed Conference Publications

[12] E. Tam and D. Dunson, "Fiedler regularization: Learning neural networks with graph sparsity," in *Proceedings of the 37th International Conference on Machine Learning (ICML 2020)*, vol. 119, Proceedings of Machine Learning Research, 2020, pp. 9346–9355.

Patents

[13] V. Rajan, M. V. Boland, R. Gaddipati, *et al.*, *Automated and non-mydriatic fundus-perimetry camera for irreversible eye diseases*, WO Patent WO2014182769A1, 2014.

Professional and Research Experience

Instacart, Machine Learning Engineer	June - August 2024
Pinterest Labs, Research Scientist	May - July 2022
Facebook, Research Scientist	July - September 2021
Apple AIML (Siri Natural Language), Research Scientist	April - June 2021
Amazon Science, Research Scientist	May - August 2020
Google (Search Team), Data Scientist	May - August 2019
NextCapital (Acquired by Goldman Sachs), Financial Engineer	June - August 2018
Laboratory of John Carlson, Yale University, Research Assistant	Sep 2016 - May 2017
JHU Center for Imaging Science, Research Assistant	Dec 2013 - May 2016
Laboratory of Alex Kolodkin, JHU Medicine, Research Assistant	Sep 2013 - May 2016

Teaching Experience

Duke University, Durham, NC

Instructor

- STA199 Introduction to Data Science and Statistical Thinking — Summer 2023
- MATH230/STA230 Probability — Summer 2022

Teaching Assistant

- STA199 Introduction to Data Science (Head TA) Spring 2023, Fall 2023
  - Instructor: Elijah Meyer
  - Responsible for all two sections of the course, with > 320 students enrolled.
- DECISION618 Data Analytics for Business Fall 2022, Fall 2023
  - Instructor: Alex Belloni
- DECISION520Q Data Science for Business. Fall 2022, Fall 2023
  - Instructor: Alex Belloni
- STA671/CS671 Algorithms for Machine Learning Fall 2022, Fall 2021
  - Instructor: Cynthia Rudin
- STA561 Probabilistic Machine Learning Spring 2021
  - Instructor: Eric Laber
- STA101 Data Analysis and Statistical Inference (Head TA) Spring 2019
  - Instructor: Tavis Abrahamson
- MATH230/STA230 Probability Fall 2018
  - Instructor: Robert Wolpert

University of Chicago, Chicago, IL

Head Teaching Assistant

- PPHA30550 Introduction to Programming for Public Policy Spring 2018
  - Instructor: Eric Potash

Yale University, New Haven, CT

Teaching Fellow

- BENG 249 Introduction to Biomedical Computation Spring 2017
  - Instructor: Michael Mak

Johns Hopkins University, Baltimore, MD

Teaching Assistant

- 020.670/020.370 Emerging Strategies in Biomedical Research Spring 2016
  - Instructor: Samer Hattar
- 560.348 Probability and Statistics for Engineers Spring 2016
  - Instructor: Sauleh Siddiqui
- 580.111 Biomedical Modeling and Design Fall 2015
  - Instructor: Eileen Haase

Posters and Presentations

- **Contributed Talk at INFORMS (AI Performance and Evaluation Session) (2025)**
  Title: On the Statistical Capacity of Deep Generative Models
- **Poster at Stanford University Department of Biomedical Data Science Retreat (2025)**
  Title: On the Statistical Capacity of Deep Generative Models
- **Poster at the Objective Bayes Methodology (O'Bayes) Conference (2025)**
  Title: On the Statistical Capacity of Deep Generative Models
- **Invited Talk at the International Indian Statistical Association (IISA) Conference (2025)**
  Title: Approximating Distributions via Deep Generative Models: Theory, Limitations and Directions

- **Poster at the Objective Bayes Methodology (O'Bayes) Conference (2025)**
  Title: On the Statistical Capacity of Deep Generative Models
- **Poster at the Bayesian Nonparametrics (BNP) Conference (2025)**
  Title: On the Statistical Capacity of Deep Generative Models (Best Poster Award)
- **Invited Talk at Scott Linderman's Group at Stanford Department of Statistics ((2025)**
  Title: Graphical and Isoperimetric Perspectives on Probabilistic and Bayesian Modeling
- **Invited Student Seminar Talk at University of Florida Department of Statistics (2024)**
  Title: Exact Sampling of Spanning Trees via Fast-Forwarded Random Walks
- **Invited Talk at Wilkins Aquino's Group at Duke Department of Mechanical Engineering (2023)**
  Title: On the Statistical Capacity of Deep Generative Models
- **Invited Panel at Electronic Conference On Teaching Statistics (eCOTS) (2022)**
  Title: Supporting Mentored Undergraduate Research in Statistics
- **Poster at Statistical and Applied Mathematical Sciences Institute (SAMSI) Closing Ceremony(2021)**
  Title: Multiscale Graph Comparison via Embedded Laplacian Distances
- **Oral Presentation at International Conference on Machine Learning (ICML 2020)**
  Title: Fiedler Regularization: Learning Neural Networks with Graph Sparsity

Advising and Mentoring

Master's Mentees

- **Sanjay Palta-Hill** (Stanford) 2025-
  Initiated and directed a Bayesian Compartment Modeling research project and guided a Stanford BS/MS co-term student in Statistics on all aspects of research, coding and writing
- **Priyanka Shrestha** (Stanford) 2024-
  Initiated and directed a Spatial Genomics research project and guided a Stanford BS/MS co-term student in Computer Science on all aspects of research, coding and writing.

Undergraduate Mentees

- **Richard Cui**, **Chris Kan** (Duke) 2023-2024
  Initiated and directed a Spectral Clustering research project via Duke's MUSER program and guided 2 undergraduate students on all aspects of research, coding and writing.
- **Zeping (Danny) Luo**, **Tony Wu**, **Rui Xin** (Duke) 2021-2022
  Initiated and directed a Bayesian Deep Learning research project via Duke's MUSER program and guided 3 undergraduate students on all aspects of research, coding and writing.
- **Arthi Kozhumam**, **Niisoja Torto**, **Shagun Vashisth** (Duke) 2019-2020
  Mentored Duke undergraduate students who were working on public health related honors theses with Professor Sumi Ariely. Provided mentorship on all aspects of data processing and statistical analysis.

Honors and Awards

- ISBA Bayesian Nonparametrics (BNP) Conference Best Poster Award 2025
- IMS New Researchers Travel Award 2025
- JSM Early Career Travel Award 2025
- Objective Bayes Methodology Conference (O'Bayes) Travel Award 2025
- Bayesian Nonparametrics (BNP) Conference Travel Award 2025
- Croucher Foundation Postdoctoral Fellowship 2025
- G-Research PhD and Postdoctoral Fellow Grant Award 2024
- Stanford Warren Alpert Postdoctoral Fellowship in AI and Computational Biology 2024
- Duke Nominee for the Schmidt Science Fellowship 2024
- Duke Statistical Science Outstanding Mentor of Undergraduate Researchers Award 2024

- Duke Statistical Science Teaching Assistant of the Year Award (Honorable Mention) 2023
- Duke Statistical Science Teaching Assistant of the Year Award (Honorable Mention) 2022
- Duke Nominee for the Microsoft Research PhD Fellowship 2020
- Johns Hopkins General Honors and Departmental Honors 2016
- Johns Hopkins Student Initiative Fund Award 2016
- Johns Hopkins Ralph O'Connor Award 2016
- Johns Hopkins Francis Bacon Fellow for Scientific Writing 2016
- Yale YHack Finalist (Top 8 out of >1000) 2014

Professional Service

Chair

- *Assistant Program Chair, NeurIPS (Position Track)* (2025)

Reviewer (Statistics)

- *Annals of Applied Statistics* (2024)
- *Journal of the Royal Statistical Society, Series B* (2025)

Reviewer (ML/AI)

- *ICML* (2020, 2021, 2022, 2023, 2024, 2025)
- *NeurIPS* (2021, 2022, 2023, 2024, 2025)
- *ICLR* (2021, 2022, 2023, 2024, 2025, 2026)
- *AISTATS* (2023, 2025, 2026)
- *KDD* (2023, 2024)
- *SDM* (2024) (Program Committee)
- *AAAI* (2026) (Program Committee)
- *IEEE Transactions of Neural Networks and Learning Systems* (2023, 2024)
- *Transactions of Machine Learning Research* (2023, 2024, 2025)
- *Neurocomputing* (2024)

Professional Memberships

- *Royal Statistical Society (RSS), Fellow*
- *American Statistical Association (ASA), Member*
- *Institute of Mathematical Statistics (IMS), Member*
- *International Society for Bayesian Analysis (ISBA), Member*

Academic References

Dr. David Dunson (e-mail: dunson@duke.edu)

- Arts and Sciences Distinguished Professor of Statistical Science and Mathematics, Duke University
- ⋆ *Dr. Dunson is my PhD advisor*

Dr. Barbara Engelhardt (e-mail: bengelhardt@stanford.edu)

- Professor of Biomedical Data Science, Stanford University
- ⋆ *Dr. Engelhardt is my postdoctoral advisor*

Dr. Cynthia Rudin (e-mail: cynthia.rudin@duke.edu)

- Gilbert, Louis, and Edward Lehrman Distinguished Professor of Computer Science, Duke University
- ⋆ *Dr. Rudin is my teaching reference.*

Dr. Alex Kolodkin (e-mail: kolodkin@jhmi.edu)

- Charles J. Homcy and Simeon G. Margolis Professor of Neuroscience, Johns Hopkins School of Medicine
- ⋆ *Dr. Alex Kolodkin can speak to my experiences in the biomedical sciences and bench research*

Dr. Leo Duan (e-mail: li.duan@ufl.edu)

- Associate Professor of Statistics, University of Florida
- ⋆ *Dr. Leo Duan is a collaborator and co-author.*