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## Appointments

- **Yale University** New Haven, USA  
*Associate Professor* *July 2020 - Present*
  - Electrical Engineering
  - Computer Science
  - Statistics & Data Science
- **Google Research** New York, USA  
*Staff Research Scientist* *Aug. 2021 - Present*
- **University of California, Berkeley** Berkeley, USA  
*Long-Term Participants of Simons-Berkeley Institute* *Jan 2022 - May 2022*
  - Learning and Games
- **University of California, Berkeley** Berkeley, USA  
*Long-Term Participants of Simons-Berkeley Institute* *Aug 2020 - Dec 2020*
  - Theory of Reinforcement Learning
- **Google Research** New York, USA  
*Senior Visiting Research Faculty* *Aug. 2018 - Aug. 2021*
- **University of California, Berkeley** Berkeley, USA  
*Research Fellow of Simons-Berkeley Institute* *Jan. 2017 - June 2017*
  - Foundations of Machine Learning Program
- **ETH Zurich** Zurich, Switzerland  
*Visiting Professor of Computer Science* *June 2015 - Aug. 2015*
- **Yale University** New Haven, USA  
*Assistant Professor of Electrical Engineering & Computer Science* *July 2014 - June 2020*

## Education

- **ETH Zurich** Zurich, Switzerland  
*Post-Doctoral Fellow (Hosted by Prof. Andreas Krause)* *Mar. 2013 - July. 2014*
- **Swiss Federal Institute of Technology (EPFL)** Lausanne, Switzerland  
*Ph.D. in Computer and Communication Sciences.* *Jan. 2008 - Oct. 2012*
  - Dissertation Title: *Graph-Based Information Processing: Scaling Laws and Applications.*
  - Supervisors: Prof. Rudiger Urbanke, Prof. Martin Vetterli.
- **Swiss Federal Institute of Technology (EPFL)** Lausanne, Switzerland  
*B.Sc. and M.Sc. in Computer and Communication Sciences.* *Oct. 2003 - Sept. 2007*

## Honors, Awards, and Distinctions

**Sep. 2022 Best Paper award** for the paper “*Transforming connectomes to ‘any’ parcellation via graph matching*” from GRaphs in biomedicAl Image anaLysis (GRAIL).

Nov. 2021 **Bell Labs Prize** (second place) for *"Reading the Brain: From Neurons to Bits"*.

Apr. 2019 **National Science Foundation (NSF) CAREER Award**.

Jan. 2019 **Office of Naval Research (ONR) Young Investigator Award**.

Dec. 2018 **Amazon Research Award**.

Dec. 2018 **Facebook MAIN Award** for the paper *"State-Specific Individualized Functional Networks Form a Predictive Signature of Brain State"* from Montreal Artificial Intelligence and Neuroscience Conference.

Oct. 2017 **Air Force Office of Scientific Research (AFOSR) Young Investigator Award**.

Sep. 2017 **Best Paper Award** for the paper *"A Submodular Approach to Create Individualized Parcellations of the Human Brain"* from International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI).

Jul. 2017 **Microsoft Azure Research Award**.

Feb. 2017 **Grainger Award from National Academy of Engineering** for Advancement of Interdisciplinary Research.

Jul. 2016 **DARPA Young Faculty Award**.

Mar. 2016 **Google Research Faculty Award**.

Feb. 2016 **Simons-Berkeley Research Fellowship Award**.

Apr. 2015 **Best Student Paper Award** for the paper *"Tradeoffs for Space, Time, Data and Risk in Unsupervised Learning"* from International Conference in Artificial Intelligence and Statistics (AISTATS).

Feb. 2015 **IEEE Data Storage Best Student Paper Award** for the paper *"Noise-Enhanced Associative Memories"* from Data Storage Technical Committee of the IEEE Communications Society.

Oct. 2013 **Patrick Denantes Memorial Prize** for the best Ph.D. thesis *"Graph-Based Information Processing: Scaling Laws and Applications"* from the school of computer and communication sciences at EPFL.

June 2013 Selected as **ETH Fellow** and received the **ETH Fellowship Grant**.

April 2011 **Best Student Paper Award** for the paper *"Calibration in Circular Ultrasound Tomography Devices"* from the International Conference on Acoustics, Speech, and Signal Processing (ICASSP).

June 2010 **Best Student Paper Award** for the paper *"Distributed Sensor Network Localization from Local Connectivity: Performance Analysis for the HOP-TERRAIN Algorithm"* from ACM/SIGMETRICS.

May 2010 **Best Student Paper Award Runner-up** for the paper *"Graph-Constrained Group Testing"* from the International Symposium on Information Theory (ISIT).

## Student/Mentee Awards

Feb. 2022 Graduate Fellowship for STEM diversity from NSA for Jane Lee.

Feb. 2021 Simons Research Fellowship 2022 for Chris Harshaw.

Mar. 2020 Brain Initiative Trainee Award 2020 for Javid Dadashkarimi.

Feb. 2020 Simons Research Fellowship 2020 for Lin Chen.

Oct. 2019 Best Poster Award in International Workshop on Connectomics in Neuroimaging, MICCAI 2019 for Javid Dadashkarimi.

Apr. 2019 Ivy 3-Minute Thesis Competition Award 2019 for Mehraveh Salehi.

Oct. 2019 Google PhD Fellowship Award 2018 for Lin Chen

Oct. 2017 MICCAI Young Scientist Award 2017 for Mehraveh Salehi.

Apr 2015 Early Postdoc Mobility fellowships 2015 from Swiss National Science Foundation for Ehsan Kazemi.

## Grants/Funding

- **NSF Institute for Learning-enabled Optimization at Scale** 20M USD (Yale Portion: ~2M USD)  
*Member of the Foundations Team, Portion Allocated to PI: 33%* 11/2021-11/2026
- **TATA Sons Limited: Decision Making with Humans and Machines in the Loop** 170K USD  
*Principle Investigator, Portion Allocated to PI: 100%* 04/2019-12/2021
- **ONR Young Investigator Award : Robust Learning in Dynamic Environments** 680K USD  
*Principle Investigator, Portion Allocated to PI: 100%* 06/2019-05/2023
- **NSF CAREER: Leveraging Combinatorial Structures for Robust and Scalable Learning** 550K USD  
*Principle Investigator, Portion Allocated to PI: 100%* 05/2019-04/2024
- **Amazon Research Award: Learning through the Lens of Structures** 80K USD  
*Principle Investigator, Portion Allocated to PI: 100%* 05/2019-05/2020
- **TATA Sons Limited: Data Analysis with "The Right to be Forgotten"** 125K USD  
*Principle Investigator, Portion Allocated to PI: 100%* 04/2019-03/2020
- **AFOSR Young Investigator Award: Information Content of Big Data** 443K USD  
*Principle Investigator, Portion Allocated to PI: 100%* 02/2018-02/2021
- **National Academy of Engineering: A Unified Framework for Saliency Detection** 39K USD  
*Principle Investigator, Portion Allocated to PI: 100%* 04/2017-11/2019
- **DARPA Young Faculty Award: Efficient Learning of Human Intent from Observations** 500K USD  
*Principle Investigator, Portion Allocated to PI: 100%* 09/2016-03/2019
- **Google Faculty Award: Data Summarization at Massive Scale** 82K USD  
*Principle Investigator, Portion Allocated to PI: 100%* 04/2016-04/2017

## Mentoring and Advising

- **Current Post-docs:**
  - Farzin Haddadpour (since 03/15/2021, Electrical Engineering)
  - Insu Han (since 08/01/2021, Electrical Engineering)
- **Current PhD Students:**
  - Felix Zhou (since 08/01/2022, Computer Science)
  - Peiyuan Zhang (since 08/01/2022, Electrical Engineering)
  - Grigoris Velegkas (since 09/01/2021, Computer Science)

- Siddharth Mitra (since 09/01/2020, Computer Science)
- Jane Lee (since 09/01/2020, Computer Science)
- Javid Dadashkarimi (since 09/2018, co-advised with Dustin Scheinost, Computer Science)
- **Former Post-Docs**
  - Mohammad Shadravan (03/01/2020 - 05/31/2021)
  - Ehsan Kazemi (03/01/2017-05/01/2020)
    - \* Research Scientist at Google (since 04/01/2020).
- **Former PhD Students:**
  - Chris Harshaw (09/2016-09/2021 co-advised with Daniel Spielman, Computer Science)
    - \* Thesis Title: *"Algorithmic Advances for the Design and Analysis of Randomized Experiments"*
    - \* Simons-Berkeley Post-Doctoral Fellow (since 01/01/2022)
  - Mingrui Zhang (07/01/2018 - 07/01/2021, Statistics and Data Science)
    - \* Thesis Title: *"Scalable Projection-Free Optimization"*
  - Marko Mitrovic (09/01/2015-05/01/2020, Computer Science).
    - \* Thesis Title: *"Modern Challenges for Machine Learning Applications of Submodularity: Privacy, Scalability, and Sequences"*
    - \* Software Engineer at Google (since 08/01/2020).
  - Lin Chen (09/01/2014-07/01/2020, Electrical Engineering).
    - \* Thesis Title: *"Online Optimization: Convex and Submodular Functions"*
    - \* Research Scientist at Google (since 04/01/2022).
  - Mehraveh Salehi (09/2015-09/2019, co-advised with Todd Constable, Electrical Engineering).
    - \* Thesis Title: *"Individualized and Task-Specific Functional Brain Mapping"*
    - \* Chief Experience Officer at Summary Analytics Inc (since 09/01/2019).
- **Former Undergraduate Students:**
  - Hannah Lawrence (01/2019-06/2019, Applied Mathematics)
    - \* Thesis Title: *"Consistent Online Learning"*
    - \* Graduate Student at MIT (since 09/01/2021).
  - Serban Stan (08/2016-12/2016, Computer Science)
    - \* Thesis Title: *"Probabilistic Submodular Maximization"*
    - \* Graduate Student at USC (since 09/01/2017).
  - Kira Tebbe (08/2016-12/2016, Sociology)
    - \* Thesis Title: *"Building a Content-Based Recommendation System for Yale College Courses"*
- **Former Freshmen Mentees (@Yale Silliman College):**
  - Eric Duong, Hristo Staykov, Evelyn Huang, Calvin Schwart, Elizabeth Bays, J Joseph, Antonio Medina, Madison Papir, Kenia Hale, Anthony Ji, Greg Naratil, Jason Kim, Kenny Wang, John Dallard, Dan Shao, Harshal Sheth, Preston Smith

## Publications

### • Journal Papers:

1. M . Feldman, C. Harshaw, A. Karbasi. "How Do You Want Your Greedy: Simultaneous or Repeated?". Accepted to Journal of Machine Learning Research (JMLR), Available on arXiv:2009.13998.
2. E . Kazemi, C. Harshaw, M. Feldman, A. Karbasi. "The Power of Subsampling in Submodular Optimization". In Mathematics of Operations Research, 2022.
3. Z . Shen, A. Mokhtari, H. Hassani, A. Karbasi. "Stochastic Conditional Gradient ++: (Non-)Convex Minimization and Continuous Submodular Maximization". In SIAM Journal on Optimization 2020.
4. E . Tohidi, R. Amiri, M. Coutino, D. Gesbert, G. Leus, A. Karbasi "Submodularity in Action: From Machine Learning to Signal Processing Applications". In IEEE Signal Processing Magazine, 2020.
5. A . Mokhtari, H. Hassani, A. Karbasi. "Stochastic Conditional Gradient Methods: From Convex Minimization to Submodular Maximization". In Journal of Machine Learning Research (JMLR), 2020.
6. M . Salehi, A. Greene, A. Karbasi, X. Shen, D. Scheinost, T. Constable. "There Is No Single Functional Atlas, Even for a Single Individual". In NeuroImage, 2020.
7. M . Salehi, A. Karbasi, D. Barron, D. Scheinost, T. Constable. "Individualized functional networks reconfigure with cognitive state". In NeuroImage, 2020. (**Facebook MAIN Award**)
8. A . Karbasi, A. H. Salavati, M. Vetterli "Learning Neural Connectivity from Firing Activity: Efficient Algorithms with Provable Guarantees on Topology". In Journal of Computational Neuroscience, 2018.
9. M . Salehi, A. Karbasi, X. Shen, D. Scheinost, R. Constable "An Exemplar-Based Approach to Individualized Parcellation Reveals the Need for Sex Specific Functional Network". In NeuroImage, 2017.
10. B . Mirzasoleiman, A. Karbasi, R. Sarkar, and A. Krause. "Distributed Submodular Maximization". In Journal of Machine Learning Research (JMLR), 2016.
11. A . Karbasi, S. Ioannidis and L. Massoulié. "From Small-World Networks to Comparison-Based Search". In IEEE Transactions on Information Theory, 2015.
12. A . Karbasi, A. H. Salavati, A. Shokrollahi and L. Varshney. "Noise Facilitation in Associative Memories of Exponential Capacity". In Neural Computation, vol. 26, p 2493-2526, Nov. 2014
13. A . Karbasi and S. Oh. "Robust Localization from Incomplete Local Information". In IEEE / ACM Transactions on Networking, vol. 21, p 1131-1144, Aug. 2013.
14. R . Parhizkar, A. Karbasi, S. Oh and M. Vetterli. "Calibration for Ultrasound Breast Tomography Using Matrix Completion". In IEEE Transactions on Signal Processing, vol. 61, p 4923-4933, Oct. 2013.
15. A . Amini, A. Karbasi and F. Marvasti. "Low-rank Matrix Approximation Using Point-wise Operators". In IEEE Transactions on Information Theory, vol. 58, p 302-310, Jan. 2012.
16. M . Cheraghchi, A. Karbasi, S. Mohajer and V. Saligrama. "Graph-Constrained Group Testing". In IEEE Transactions on Information Theory, vol. 58, p 248 - 262, Jan. 2012.
17. M . Cheraghchi, A. Hormati, A. Karbasi and M. Vetterli. "Group Testing with Probabilistic Tests: Theory, Design and Application". In IEEE Transactions on Information Theory, vol. 57, p 7057 - 7067, Oct. 2011.

### • Preprints

18. H . Esfandiari, A. Kalavasis, A. Karbasi, A. Krause, V. Mirrokni, G. Velegkas. "Reproducible Bandits". Available on arXiv:2210.01898.
19. M . Fereydounian, H. Hassani, A. Karbasi. "What Functions Can Graph Neural Networks Generate?". Available on arXiv:2202.08833.
20. K . E. Nikolakakis, F. Haddadpour, A. Karbasi, D. S. Kalogieras. "Beyond Lipschitz: Sharp Generalization and Excess Risk Bounds for Full-Batch GD". Available on arXiv:2204.12446.

21. Q . Gu, A. Karbasi, K. Khosravi, V. Mirrokni, D. Zhou. "Batched Neural Bandits". Available on arXiv:2102.13028.

• **Conference Papers:**

22. S . Hanneke, A. Karbasi, S. Moran, G. Velegkas. "Universal Rates for Interactive Learning". Accepted to Neural Information Processing Systems (NeurIPS), 2022. (**Oral Presentation**, acceptance rate: 25.6%)
23. A . Kalavasis, G. Velegkas, A. Karbasi. "Multiclass Learnability Beyond the PAC Framework: Universal Rates and Partial Concept Classes". Accepted to Neural Information Processing Systems (NeurIPS), 2022. (acceptance rate: 25.6%)
24. I . Mehalel, S. Hanneke, S. Moran, M. Mahmoody, A. Karbasi. "On Optimal Learning Under Targeted Data Poisoning". Accepted to Neural Information Processing Systems (NeurIPS), 2022. (**Oral Presentation**, acceptance rate: 25.6%)
25. I . Han, A. Zandieh, J. Lee, R. Novak, L. Xiao, A. Karbasi. "Fast Neural Kernel Embeddings for General Activations". Accepted to Neural Information Processing Systems (NeurIPS), 2022. (acceptance rate: 25.6%)
26. K . E. Nikolakakis, F. Haddadpour, D. S. Kalogierias, A. Karbasi. "Black-Box Generalization". Accepted to Neural Information Processing Systems (NeurIPS), 2022. (acceptance rate: 25.6%)
27. G . Velegkas, Z. Yang, A. Karbasi. "Reinforcement Learning with Logarithmic Regret and Policy Switches". Accepted to Neural Information Processing Systems (NeurIPS), 2022. (acceptance rate: 25.6%)
28. W . Li, M. Feldman, E. Kazemi, A. Karbasi. "Submodular Maximization in Clean Linear Time". Accepted to Neural Information Processing Systems (NeurIPS), 2022. (acceptance rate: 25.6%)
29. Q . Liang, J. Dadashkarimi, W. Dai, A. Karbasi, J. Chang, H. Zhou, D. Scheinost "Transforming connectomes to any parcellation via graph matching". In GRaphs in biomedicAl Image anaLysis (GRAIL), 2022. (**Best Paper Award**)
30. J . Dadashkarimi, A. Karbasi, D. Scheinost. "Combining multiple atlases to estimate data-driven mappings between functional connectomes using optimal transport". In Proceedings of International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), 2022 (acceptance rate: 32%)
31. I . Han, M. Gartrell, E. Dohmatob, A. Karbasi. "Scalable MCMC Sampling for Nonsymmetric Determinantal Point Processes". In Proceedings of International Conference on Machine Learning (ICML), 2022. (**Oral Presentation**, acceptance rate: 2%)
32. Z . Shen, Z. Wang, S. Kale, A. Ribeiro, A. Karbasi, H. Hassani "Self-Consistency of the Fokker-Planck Equation". In Proceedings of Conference on Learning Theory (COLT), 2022. (acceptance rate: 32%)
33. I . Han, M. Gartrell, J. Gillenwater, E. Dohmatob, A. Karbasi. "Scalable Sampling for Nonsymmetric Determinantal Point Processes". In Proceedings of International Conference on Learning Representations (ICLR), 2022. (**Spotlight Presentation**, acceptance rate: 5%)
34. F . Haddadpour, M. Mahdi Kamani, M. Mahdavi, A. Karbasi. "Learning Distributionally Robust Models at Scale via Composite Optimization". In Proceedings of International Conference on Learning Representations (ICLR), 2022. (acceptance rate: 33%)
35. Z . Shen, H. Hassani, S. Kale, A. Karbasi. "Federated Functional Gradient Boosting". In Proceedings of International Conference on Artificial Intelligence and Statistics (AISTATS), 2022. (acceptance rate: 29%).
36. S . Rajput, K. Sreenivasan, D. Papailiopoulos, A. Karbasi. "An Exponential Improvement on the Memorization Capacity of Deep Threshold Networks". In Proceedings of Neural Information Processing Systems (NeurIPS), 2021. (acceptance rate: 26%)

37. L . Chen, Y. Min, M. Belkin, A. Karbasi. *"Multiple Descent: Design Your Own Generalization Curve"*. In Proceedings of Neural Information Processing Systems (NeurIPS), 2021. (acceptance rate: 26%)
38. A . Karbasi, V. Mirrokni, M. Shadravan. *"Parallelizing Thompson Sampling"*. In Proceedings of Neural Information Processing Systems (NeurIPS), 2021. (acceptance rate: 26%)
39. S . Mitra, M. Feldman, A. Karbasi. *"Submodular + Concave"*. In Proceedings of Neural Information Processing Systems (NeurIPS), 2021. (acceptance rate: 26%)
40. J . Dadashkarimi, A. Karbasi, D. Scheinost. *"Data-driven Mapping Between Functional Connectomes Using Optimal Transport"*. In Proceedings of International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), 2021 (acceptance rate: 32%)
41. H . Esfandiari, A. Karbasi, V. Mirrokni. *"Adaptivity in Adaptive Submodularity"*. In Proceedings of Conference on Learning Theory (COLT), 2021. (acceptance rate: 35%)
42. Y . Min, L. Chen, A. Karbasi. *"The Curious Case of Adversarially Robust Models: More Data Can Help, Double Descend, or Hurt Generalization"*. In Proceedings of Uncertainty in Artificial Intelligence (UAI), 2021. (acceptance rate: 27%).
43. J . Gao, A. Karbasi, M. Mahmoody. *"Learning and Certification under Instance-targeted Poisoning"*. In Proceedings of Uncertainty in Artificial Intelligence (UAI), 2021. (acceptance rate: 27%).
44. E . Kazemi, S. Minaee, M. Feldman, A. Karbasi. *"Regularized Submodular Maximization at Scale"*. In Proceedings of International Conference on Machine Learning (ICML), 2021. (acceptance rate: 21.8%).
45. R . Xu, L. Chen, A. Karbasi. *"Meta Learning In the Continuous Time Limit"*. In Proceedings of International Conference on Artificial Intelligence and Statistics (AISTATS), 2021. (acceptance rate: 28%). Available on arXiv:2006.10921.
46. H . Esfandiari, A. Karbasi, A. Mehrabian, V. Mirrokni. *"Regret Bounds for Batched Bandits"*. In Proceedings of AAAI Conference on Artificial Intelligence (AAAI), 2021. (acceptance rate: 21%).
47. A . Badanidiyuru, A. Karbasi, E. Kazemi, J Vondrak. *"Submodular Maximization Through Barrier Functions"*. In Proceedings of Neural Information Processing Systems (NeurIPS), 2020. (**Spotlight Presentation**, acceptance rate: 3.3%).
48. M . Feldman, A. Karbasi. *"Continuous Submodular Maximization: Beyond DR-Submodularity"*. In Proceedings of Neural Information Processing Systems (NeurIPS), 2020. (acceptance rate: 21%).
49. A . Bhaskara, A. Karbasi, S. Lattanzi, M. Zadimoghaddam. *"Online MAP Inference of Determinantal Point Processes"*. In Proceedings of Neural Information Processing Systems (NeurIPS), 2020. (acceptance rate: 21%).
50. L . Chen, Q. Yu, H. Lawrence, A. Karbasi. *"Minimax Regret of Switching-Constrained Online Convex Optimization: No Phase Transition"*. In Proceedings of Neural Information Processing Systems (NeurIPS), 2020. (acceptance rate: 21%).
51. L . Chen, Y. Min, M. Zhang A. Karbasi. *"More Data Can Expand the Generalization Gap Between Adversarially Robust and Standard Models"*. In Proceedings of International Conference on Machine Learning (ICML), 2020. (acceptance rate: 21.8%)
52. R . Haba, E. Kazemi, M. Feldman, A. Karbasi. *"Streaming Submodular Maximization under a  $k$ -Set System Constraint"*. In Proceedings of International Conference on Machine Learning (ICML), 2020. (acceptance rate: 21.8%)
53. M . Zhang, Z. Shen, A. Mokhtari, H. Hassani, A. Karbasi. *"One Sample Stochastic Frank-Wolfe"*. In Proceedings of Artificial Intelligence and Statistics (AISTATS), 2020. (acceptance rate: 28%)
54. M . Zhang, L. Chen, A. Mokhtari, H. Hassani, A. Karbasi. *"Quantized Frank-Wolfe: Faster Optimization, Lower Communication, and Projection Free"*. In Proceedings of International Conference on Artificial Intelligence and Statistics (AISTATS), 2020. (acceptance rate: 28%)

55. L . Chen, M. Zhang, H. Hassani, A. Karbasi. *"Black Box Submodular Maximization: Discrete and Continuous Settings"*. In Proceedings of Artificial Intelligence and Statistics (AISTATS), 2020. (acceptance rate: 28%)
56. A . Karbasi, H. Hassani, A. Mokhtari, Z. Shen. *"Stochastic Continuous Gradient++"*. In Proceedings of Neural Information Processing Systems (NeurIPS), 2019. (acceptance rate: 21.1%)
57. M . Mitrovic, E. Kazemi , M. Feldman, A. Krause, A. Karbasi. *"Adaptive Sequence Submodularity"*. In Proceedings of Neural Information Processing Systems (NeurIPS), 2019. (acceptance rate: 21.1%)
58. M . Zhang, L. Chen, H. Hassani, A. Karbasi. *"Online Continuous Submodular Maximization: From Full-Information to Bandit Feedback"*. In Proceedings of Neural Information Processing Systems (NeurIPS), 2019. (acceptance rate: 21.1%)
59. C . Harshaw, M. Feldman, J. Ward, A. Karbasi. *"Submodular Maximization beyond Non-negativity: Guarantees, Fast Algorithms, and Applications"*. In Proceedings of International Conference on Machine Learning (ICML), 2019. (acceptance rate: 22.6%)
60. E . Kazemi, M. Mitrovic, M. Zadimoghaddam, S. Lattanzi, A. Karbasi. *"Submodular Streaming in All Its Glory: Tight Approximation, Minimum Memory and Low Adaptive Complexity"*. In Proceedings of International Conference on Machine Learning (ICML), 2019. (acceptance rate: 22.6%)
61. L . Chen, M. Feldman, A. Karbasi. *"Unconstrained Submodular Maximization with Constant Adaptive Complexity"*. In Proceedings of ACM Symposium on Theory of Computing (STOC), 2019.
62. S . Ghili, E. Kazemi, A. Karbasi. *"Eliminating Latent Discrimination: Train Then Mask"*. In Proceedings of AAAI Conference on Artificial Intelligence (AAAI), 2019. (acceptance rate: 16.2%)
63. L . Chen, M. Zhang, A. Karbasi. *"Projection-Free Bandit Convex Optimization"*. In Proceedings of International Conference on Artificial Intelligence and Statistics (AISTATS), 2019. (acceptance rate: 32.4%)
64. M . Feldman, A. Karbasi, E. Kazemi. *"Do Less, Get More: Streaming Submodular Maximization with Subsampling"*. In Proceedings of Neural Information Processing Systems (NIPS), 2018. (**Spotlight Presentation**, acceptance rate: 3.3%)
65. E . Kazemi, M. Zadimoghaddam, A. Karbasi. *"Scalable Deletion-Robust Submodular Maximization: Data Summarization with Privacy and Fairness Constraints"*. In Proceedings of International Conference on Machine Learning (ICML), 2018. (acceptance rate: 25.1%)
66. A . Mokhtari, H. Hassani, A. Karbasi. *"Decentralized Submodular Maximization: Bridging Discrete and Continuous Settings"*. In Proceedings of International Conference on Machine Learning (ICML), 2018. (acceptance rate: 25.1%)
67. M . Mitrovic, E. Kazemi, M. Zadimoghaddam, A. Karbasi. *"Data Summarization at Scale: A Two-Stage Submodular Approach"*. In Proceedings of International Conference on Machine Learning (ICML), 2018. (acceptance rate: 25.1%)
68. L . Chen, C. Harshaw, H. Hassani, A. Karbasi. *"Projection-Free Online Optimization with Stochastic Gradient: From Convexity to Submodularity"*. In Proceedings of International Conference on Machine Learning (ICML), 2018. (acceptance rate: 25.1%)
69. L . Chen, M. Feldman, A. Karbasi. *"Weakly Submodular Maximization Beyond Cardinality Constraints: Does Randomization Help Greedy?"*. In Proceedings of International Conference on Machine Learning (ICML), 2018. (acceptance rate: 25.1%)
70. L . Chen, H. Hassani, A. Karbasi. *"Online Continuous Submodular Maximization"*. In Proceedings of International Conference on Artificial Intelligence and Statistics (AISTATS), 2018. (**Oral Presentation**, acceptance rate: 5.1%)
71. E . Kazemi, L. Chen, S. Dasgupta, A. Karbasi. *"Comparison-Based Learning From Weak Oracles"*. In Proceedings of International Conference on Artificial Intelligence and Statistics (AISTATS), 2018. (acceptance rate: 33.2%)



72. M . Mitrovic, M. Feldman, A. Krause, A. Karbasi. "*Submodularity on Hypergraphs: From Sets to Sequences*". In Proceedings of International Conference on Artificial Intelligence and Statistics (AISTATS), 2018. (acceptance rate: 33.2%)
73. A . Mokhtari, H. Hassani, A. Karbasi. "*Conditional Gradient Method for Submodular Maximization: Closing the Gap*". In Proceedings of International Conference on Artificial Intelligence and Statistics (AISTATS), 2018. (acceptance rate: 33.2%)
74. E . R. Elenberg, A. G. Dimakis, M. Feldman, A. Karbasi. "*Streaming Weak Submodularity: Interpreting Neural Networks on the Fly*". In Proceedings of Neural Information Processing Systems (NIPS), 2017. (**Oral Presentation**, acceptance rate: 1.2%)
75. H . Hassani, M. Soltanolkotabi, A. Karbasi. "*Gradient Methods for Submodular Maximization*". In Proceedings of Neural Information Processing Systems (NIPS), 2017. (acceptance rate: 20.9%)
76. L . Chen, A. Krause, A. Karbasi. "*Interactive Submodular Bandit*". In Proceedings of Neural Information Processing Systems (NIPS), 2017. (acceptance rate: 20.9%)
77. M . Salehi, A. Karbasi, D. Scheinost, R. Constable "*A Submodular Approach to Create Individualized Parcellations of the Human Brain*". In Proceedings of 20th International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), 2017. (**Young Scientist Award**)
78. M . Feldman, C. Harshaw, A. Karbasi. "*Greed Is Good: Near-Optimal Submodular Maximization via Greedy Optimization*". In Proceedings of Conference in Learning Theory (COLT), 2017. (acceptance rate: 32.5%)
79. L . Chen, F. Crawford, A. Karbasi. "*Submodular Variational Inference for Network Reconstruction*". In Proceedings of Conference on Uncertainty in Artificial Intelligence (UAI), 2017. (acceptance rate: 31%)
80. B . Mirzasoleiman, A. Karbasi, A. Krause. "*Deletion-Robust Submodular Maximization: Data Summarization with the Right to be Forgotten*". In Proceedings of the 34th International Conference on Machine Learning (ICML), 2017. (acceptance rate: 25.9%)
81. S . Stan, M. Zadimoghaddam, A. Krause, A. Karbasi, "*Probabilistic Submodular Maximization in Sub-Linear Time*". In Proceedings of the 34th International Conference on Machine Learning (ICML), 2017. (acceptance rate: 25.9%)
82. M . Mitrovic, M. Bun, A. Krause, A. Karbasi, "*Differentially Private Submodular Maximization: Data Summarization in Disguise*". In Proceedings of the 34th International Conference on Machine Learning (ICML), 2017. (acceptance rate: 25.9%)
83. L . Chen, H. Hassani, A. Karbasi. "*Near-Optimal Active Learning of Halfspaces via Query Synthesis in the Noisy Setting*". In Proceedings of 31st AAAI Conference on Artificial Intelligence (AAAI), 2017. (acceptance rate: 24.6%)
84. L . Chen, F. Crawford, A. Karbasi. "*Estimating the Size of a Network and its Communities from a Random Sample*". In Proceedings of Neural Information Processing Systems (NIPS), 2016. (acceptance rate: 23.6%)
85. B . Mirzasoleiman, M. Zadimoghaddam, A. Karbasi. "*Fast Distributed Submodular Cover: Public-Private Data Summarization*". In Proceedings of Neural Information Processing Systems (NIPS), 2016. (acceptance rate: 23.6%)
86. B . Mirzasoleiman, A. Badanidiyuru, A. Karbasi. "*Fast Constrained Submodular Maximization: Personalized Data Summarization*". In Proceedings of the 33rd International Conference on Machine Learning (ICML), 2016. (acceptance rate: 24.0%)
87. A . Karbasi, A. H. Salavati, M. Vetterli. "*Learning Network Structures from Firing Patterns*". In Proceedings of the 41st IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2016.

88. L . Chen, F. Crawford, A. Karbasi. "*Seeing the Unseen Network: Inferring Social Ties from Respondent-Drive Sampling*". In Proceedings of the 30th AAAI Conference on Artificial Intelligence (AAAI), 2016. (acceptance rate: 25.8%)
89. B . Mirzasoleiman, A. Karbasi, A. Badanidiyuru, A. Krause. "*Distributed Submodular Cover: Succinctly Summarizing Massive Data*". In Proceedings of Neural Information Processing Systems (NIPS), 2015. (acceptance rate: 21.9%)
90. P . Rebeschini, A. Karbasi. "*Fast Mixing for Discrete Point Processes*". In Proceedings of the 28th Annual Conference on Learning Theory (COLT), 2015. (acceptance rate: 34.8%)
91. Y . Chen, H. Hassani, A. Karbasi, A. Krause. "*Sequential Information Maximization: When is Greedy Near-optimal?*". In Proceedings of the 28th Annual Conference on Learning Theory (COLT), 2015. (acceptance rate: 34.8%)
92. A . Gotovos, A. Karbasi, A. Krause. "*Non-monotone Adaptive Submodular Maximization*". In Proceedings of International Joint Conference on Artificial Intelligence (IJCAI), 2015. (acceptance rate: 28.6%)
93. A . Karbasi, J. Lengler, A. Steger. "*Normalization Phenomena in Asynchronous Networks*". In Proceedings of the 42nd International Colloquium on Automata, Languages, and Programming (ICALP), 2015. (acceptance rate: 30.7%)
94. S . Haghghatshoar, A. Karbasi, A. Salavati. "*Asynchronous Decoding of LDPC Codes over BEC*". In Proceedings of IEEE International Symposium on Information Theory (ISIT), 2015.
95. L . Mario, M. Ohannessian, A. Karbasi, A. Krause. "*Tradeoffs for Space, Time, Data and Risk in Unsupervised Learning*". In Proceedings of the the 18th International Conference on Artificial Intelligence and Statistics (AISTATS), 2015. (**Best Student Paper Award.**, acceptance rate: 28.7%)
96. B . Mirzasoleiman, A. Badanidiyuru, A. Karbasi, J. Vondrak, A. Krause. "*Lazier Than Lazy Greedy*". In Proceedings of the 29th AAAI Conference on Artificial Intelligence (AAAI), 2015. (acceptance rate: 28.7%)
97. S . Javdani, Y. Chen, A. Karbasi, D. Bagnell, S. Srinivasa, A. Krause. "*Submodular Surrogates for Value of Information*". In Proceedings of the 29th AAAI Conference on Artificial Intelligence (AAAI), 2015. (acceptance rate: 28.7%)
98. A . Badanidiyuru, B. Mirzasoleiman, A. Karbasi, and A. Krause. "*Streaming Submodular Maximization: Massive Data Summarization on the Fly*". In Proceedings of 20th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), 2014. (acceptance rate: 14.6%)
99. A . Singla, I. Bogunovic, G. Bartok, A. Karbasi, A. Krause "*Near-Optimally Teaching the Crowd to Classify*". In Proceedings of the 31st International Conference on Machine Learning (ICML), 2014. (acceptance rate: 22%)
100. S . Javdani, Y. Chen, A. Karbasi, A. Krause, D. Bagnell, S. Srinivasa "*Near Optimal Bayesian Active Learning for Decision Making*". In Proceedings of the 17th International Conference on Artificial Intelligence and Statistics (AISTATS), 2014. (acceptance rate: 35.8%)
101. B . Mirzasoleiman, A. Karbasi, R. Sarkar, and A. Krause. "*Distributed Submodular Maximization: Identifying Representative Elements in Massive Data*". In Proceedings of Neural Information Processing Systems (NIPS), 2013. (acceptance rate: 24.8%)
102. A . Karbasi, A. H. Salavati, A. Shokrollahi, and L. Varshney. "*Noise-Enhanced Associative Memories*". In Proceedings of Neural Information Processing Systems (NIPS), 2013. (**IEEE Data Storage Best Student Paper Award**, acceptance rate: 24.8%)
103. A . Karbasi, A. H. Salavati and A. Shokrollahi. "*Coupled Neural Associative Memories*". In Proceedings of IEEE Information Theory Workshop (ITW), 2013.

104. A . Karbasi, A. H. Salavati and A. Shokrollahi. "*Iterative Learning and Denoising in Convolutional Associative Memory Networks*". In Proceedings of 30th International Conference on Machine Learning (ICML), 2013. (acceptance rate: 24%)
105. A . Karbasi and M. Zadimoghaddam. "*Constrained Binary Identification Problem*". In Proceedings of the 30th Symposium on Theoretical Aspects of Computer Science (STACS), 2013.
106. A . Karbasi and M. Zadimoghaddam. "*Sequential Group Testing with Graph Constraints*". In Proceedings of IEEE Information Theory Workshop (ITW), 2012.
107. A . Karbasi, S. Ioannidis and L. Massoulie. "*Comparison-Based Learning with Rank Nets*". In Proceedings of the 29th International Conference on Machine Learning (ICML), 2012. (acceptance rate: 27.3%)
108. A . H. Salavati and A. Karbasi. "*Multi-Level Error-Resilient Neural Networks*". In Proceedings of IEEE International Symposium on Information Theory (ISIT), 2012.
109. A . Karbasi, S. Ioannidis and L. Massoulie. "*Hot or Not: Interactive Content Search Using Comparisons*". In Proceedings of IEEE Information Theory and Applications Workshop (ITA), 2012.
110. R . Parhizkar, A. Karbasi and M. Vetterli. "*Calibration in Circular Ultrasound Tomography Devices*". In Proceedings of 36th International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2011. **(Best Student Paper Award)**
111. A . Karbasi and M. Zadimoghaddam. "*Compression with Graphical Constraints: An Interactive Browser*". In Proceedings of IEEE International Symposium on Information Theory (ISIT), 2011.
112. A . Karbasi, S. Ioannidis and L. Massoulie. "*Content Search Through Comparisons*". In Proceedings of the 38th International Colloquium on Automata, Languages and Programming (ICALP), 2011.
113. A . Karbasi and S. Oh. "*Distributed Sensor Network Localization from Local Connectivity: Performance Analysis for the HOP-TERRAIN Algorithm*". In Proceedings of ACM SIGMETRICS, 2010. **(Best Student Paper Award)**
114. A . Karbasi. "*From Centralized to Distributed Sensor Localization*". In Proceedings of ACM MobiHoc-S3, 2010.
115. A . Karbasi, S. Oh, R. Parhizkar and M. Vetterli. "*Ultrasound Tomography Calibration using Structured Matrix Completion*". In Proceedings of 20th International Congress on Acoustics, 2010.
116. S . Oh, A. Karbasi and A. Montanari. "*Sensor Network Localization from Local Connectivity : Performance Analysis for the MDS-MAP Algorithm*". In Proceedings of IEEE Information Theory Workshop (ITW), 2010.
117. M . Cheraghchi, A. Karbasi, S. Mohajer and V. Saligrama. "*Graph-Constrained Group Testing*". In Proceedings of IEEE International Symposium on Information Theory (ISIT), 2010. **(Best Student Paper Award Runner-up)**
118. M . Cheraghchi, A. Hormati, A. Karbasi and M. Vetterli. "*Compressed Sensing with Probabilistic Measurements: A Group Testing Solution*". In Proceedings of 47th Allerton Conference on Communication, Control and Computing, 2009.
119. A . Karbasi, A. Hormati, S. Mohajer and M. Vetterli. "*Support Recovery in Compressed Sensing: An Estimation Theoretic Approach*". In Proceedings of IEEE International Symposium on Information Theory (ISIT), 2009.
120. A . Karbasi and A. Sugiyama. "*A New DOA Estimation Method Using a Circular Microphone Array*". In Proceedings of 15th European Signal Processing Conference (EUSIPCO), 2007.
121. A . Karbasi and A. Sugiyama. "*A DOA Estimation Method For an Arbitrary Triangular Microphone Arrangement*". In Proceedings of 14th European Signal Processing Conference (EUSIPCO), 2006.

- **Patents:**

122. A . Karbasi, S. Ioannidis and L. Massoulié. "Hot or Not: Interactive Content Search Using Comparisons", Technicolor, Paris, 2013.
  123. A . Karbasi, S. Ioannidis and L. Massoulié. "Comparison-Based Learning with Rank Nets", Technicolor, Paris, 2012.
  124. A . Karbasi and M. Vojnovic, "Greedy Scheduling for Distributed Computing Clusters", Microsoft Research, Cambridge, 2011.
  125. A . Karbasi, S. Ioannidis and L. Massoulié. "Content Search Through Comparisons", Technicolor, Paris, 2011.
- **Thesis:**
    126. A . Karbasi. "Graph-Based Information Processing: Scaling Laws and Applications", Ph.D. Thesis, 2012. (**Patrick Denantes Memorial Prize 2013**)

## Tutorials

- **Submodular Optimization: From Discrete to Continuous and Back** H. Hassani, A. Karbasi  
*International Conference on Machine Learning (ICML)* 2020
- **Submodularity in Information and Data Science** J. Bilmes, A. Karbasi  
*International Symposium on Information Theory (ISIT)* 2018
- **Big Data Summarization: Algorithms and Applications** E. Elhamifar, A. Roy Chowdhury, A. Karbasi  
*Conference on Computer Vision and Pattern Recognition (CVPR)* 2018

## Workshop Organizations

- **Overparameterization: Pitfalls & Opportunities** Y. Bahri, Q. Gu, A. Karbasi, H. Sedghi  
*International Conference on Machine Learning (ICML)* 2021
- **Discrete Structures in Machine Learning** J. Bilmes, S. Jegelka, A. Karbasi, A. Krause, Y. Singer  
*Neural Information Processing Systems (NIPS)* 2017

## Teaching

- **Information, Computation, and Control** Yale  
*Instructor* Fall 2022
- **Neural Networks and Learning Systems** Yale  
*Co-Instructor (with Priya Panda)* Fall 2020
- **Foundations of Data Science** Yale  
*Instructor* Fall 2020
- **Stochastic Processes** Yale  
*Instructor* Spring 2020
- **Dynamic and Discrete Optimization** Yale  
*Instructor* Fall 2019
- **Dynamic and Discrete Optimization** Yale  
*Instructor* Spring 2018
- **Theoretical Challenges in Network Science** Yale  
*Instructor* Fall 2017

- **Stochastic Processes** Yale  
*Instructor* Fall 2015
- **Theoretical Challenges in Network Science** Yale  
*Instructor* Fall 2015
- **Probability and Stochastic Processes** Yale  
*Instructor* Spring 2015
- **Theoretical Challenges in Network Science** Yale  
*Instructor* Fall 2014
- **Information Theory** ETHZ  
*Co-Instructor (with J. Buhmann)* Spring 2014
- **Project-Based Machine Learning** ETHZ  
*Co-Instructor (with G. Bartok and A. Krause)* Spring 2014

## Major Departmental & University-wide Services

- Chair of Diversity, Equity, Inclusion, and Belonging (2019-2020)
- EE Educational Committee (2015-2016)
- Massini Postdoc fellowship Committee (2021)
- Thesis Committee: Youngeun Kim, Yuhang Li, Chenyu You, Wenjing Luo, Hassaan Hashmi, Siyuan Dong, Lili Wang, Daniel Fullmer, Qiaofeng Qin, Nikolaos Papadis.

## Professional Services

- Member of the **technical program committee**:
  - International Conference on Machine Learning (ICML), 2013, 2014, 2015, 2016, 2017, 2018 (**area chair**), 2019 (**area chair**), 2020 (**area chair**), 2021 (**area chair**), 2022 (**area chair**).
  - Neural Information Processing Systems (NIPS), 2013, 2014, 2016, 2018 (**area chair**), 2019 (**area chair**), 2020 (**area chair**), 2021 (**area chair**).
  - Artificial Intelligence and Statistics (AISTATS), 2019 (**Senior Program Committee**), 2020 (**Senior Program Committee**), 2021 (**Senior Program Committee**).
  - International Conference on Learning Theory (COLT) 2020 (**Senior Program Committee**), 2021 (**Senior Program Committee**).
  - AAAI, 2015, 2016, 2017, 2020 (**Senior Program Committee**).
  - International Conference on Learning Representations (ICLR), 2021 (**area chair**), 2022 (**area chair**).
  - International Joint Conference on Artificial Intelligence (IJCAI), 2020 (**Senior Program Committee**), 2021 (**Senior Program Committee**).
  - ACM SIGKDD Conference on Knowledge and Discovery, and Data Mining (KDD) 2017, 2018.
  - SIAM International Conference on Data Mining (SDM), 2018.
  - ACM/SIGMETRICS, 2015, 2016.
  - Topics in Theoretical Computer Science (TTCS), 2015.
  - Data Mining for Educational Assessment and Feedback (ASSESS), 2014, 2015.

- **Grant Review:** National Science Foundation, Air Force Office of Scientific Research, Army Research Office, Swiss Data Science Center

## Selected Invited Talks

- "How to (or not to) Run a Vaccination Trial":
  - Purdue (04/08/2022).
- "Palo Alto, We Have a Problem. There Is No Oracle!":
  - Information Systems Laboratory, Stanford (03/16/2022).
- "The Power of Adaptivity in Decision Making Problems":
  - Scalable Algorithms for Semi-supervised and Unsupervised Learning Workshop (10/05/2021).
- "Sequential Decision Making: How Much Adaptivity Is Needed Anyways?":
  - Information Systems Laboratory, Stanford (09/30/2021).
- "Batch Learning":
  - Google, NY (05/19/2021).
- "Robust Combinatorial Optimization Through Non-convex Relaxation":
  - Rutgers (04/15/2021).
- "User-Friendly Submodular Maximization":
  - Foundations of Data Science - Virtual Talk Series - UC Berkeley (06/15/2020).
  - Foundations of Data Science Seminar, UT Austin (12/06/2019).
  - ISyE Department Seminar, Georgia Tech (11/06/2019).
- "It Is Good To Relax (Maybe Best)":
  - Foundations of Data Science Seminar, ETH Zurich (01/24/2019).
- "Probabilistic Submodular Maximization in Sub-Linear Time":
  - Workshop on Local Algorithms, MIT (06/15/2018).
- "The Power of Non-Convex Relaxations for Stochastic Discrete Optimization":
  - EPFL (05/01/2018).
- "Submodular Optimization: From Discrete to Continuous and Back":
  - Simons Institute, Berkeley (06/03/2018).
  - LIDS seminar series, MIT (02/20/2018).
- "Gradient Methods for Submodular Maximization":
  - Information Theory and Applications Workshop (02/13/2018).

- Bertinoro Data-driven Algorithmics workshop (11/05/2017).
- “Greed is Good + a Bit of Randomness”:
  - EPFL (07/27/2017).
  - Simons Institute for the Theory of Computing / Berkeley (04/27/2017).
- “Cracking Big Data with Small Data”:
  - Information Systems Laboratory Colloquium / Stanford (05/11/2017).
  - Berkeley Laboratory for Information Systems and Sciences / Berkeley (04/03/2017).
- “Fast Constrained Submodular Maximization”:
  - Workshop on Local Algorithms, Microsoft Research / MIT (10/14/2016).
  - Allerton (10/01/2016).
- “Scalable Algorithms for Data Summarization”:
  - University of California, San Diego (10/24/2016).
  - Microsoft Research, New York (10/11/2016).
  - Caltech (09/22/2016).
  - University of California, Irvine (09/21/2016).
- “Adaptive Non-Monotone Submodular Maximization”:
  - Information Theory and Applications (03/02/2016).
- “Data Summarization at Massive Scale”:
  - Google (30/04/2015).
  - NYU (04/11/2015).
- “Submodular Surrogates for Value of Information”:
  - Information Theory Workshop (12/10/2015).
- “Sequential Information Maximization: When Is Greedy Near-Optimal?”:
  - Allerton Conference (02/10/2015).
- “Tradeoffs for Space, Time, Data and Risk in Unsupervised Learning”:
  - Harvard (12/09/2015).
- “Crowd Teaching”:
  - Harvard University (03/25/2015).
  - Boston University (03/26/2015).
  - Summer School on Information Processing for Large Networks in Switzerland (06/07/2015).
- “Massive Data Summarization on the Fly”:

- Brown University (03/04/2015).
  - Information Theory and Applications (03/02/2015).
- "Near-Optimally Teaching the Crowd to Classify":
  - University of Massachusetts Amherst (11/19/2014).
  - Columbia University (11/06/2014).
  - Allerton Conference (10/01/2014).
- "Distributed Submodular Optimization":
  - Information Theory and Applications (02/13/2014).
- "From Small-World Network to User Driven Content Search":
  - Google NY (11/04/2014).
  - Xerox Research Center (05/15/2014).
  - Stanford University (02/05/2014).
  - University of Toronto (08/08/2013).
  - McGill University (08/04/2013).