## ARITRA KONAR

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Research Interests	Machine Learning, Graph Mining, Network Science, Optimization	
Academic Appointments	Katholieke Universiteit Leuven, Leuven, Belgium Assistant Professor, Electrical Engineering (Aug. 2022 - )	
	University of Virginia, Charlottesville, USA	
	Research Scientist, Electrical Engineering (Jan. 2022 - July 2022) University of Virginia, Charlottesville, USA	
	Postdoctoral Researcher, Electrical Eng	gineering (Oct. 2017 - Dec. 2021)
Education	University of Minnesota - Twin Cities, Minneapolis, USA	
	Ph.D., Electrical Engineering (Sep. 2012 - Sep. 2017) University of Minnesota - Twin Cities, Minneapolis, USA	
	Master of Science, Electrical Engineering (Sep. 2012 - Sep. 2014)	
	West Bengal University of Technology, Kolkata, India	
	Bachelor of Technology, Electronics and Communications Engineering (Aug. 2007 - May 2011)	
Funding	III: Small: A Submodular Framework for Scalable Graph Matching with Performance Guarantees, NSF IIS-1908070, PI: N. D. Sidiropoulos, co-PI: A. Konar, Period: Oct. 2019 – Sept. 2022. Funding level: \$456,742.	
Honors and		
Awards	UVA Engineering Postdoctoral Teachir Awarded on a competitive basis by S (SEAS) at the University of Virginia. with the opportunity to prepare themse a SEAS undergraduate or graduate com	<i>ag Fellowship</i> Sep. 2018 - Dec. 2018 School of Engineering and Applied Sciences . The program provides research associates elves further for academic careers by teaching urse.
	UMN Doctoral Dissertation Fellowship Awarded on a competitive basis by the DDF program gives the University's r portunity to devote full-time effort to fellowship year.	Sep. 2016 - May 2017 e University of Minnesota, Twin Cities. The most accomplished Ph.D. candidates an op- dissertation research and writing during the
Teaching experience	Convex Optimization, University of Virginia, Fall 2018.	

## PUBLICATIONS Comput

Computer Science Conferences

**C6. A. Konar**, and N. D. Sidiropoulos, "The triangle-densest-k subgraph problem: Hardness, Lovász extension, and application to document summarization", *Proc. AAAI*, February 21-28, 2022, Vancouver, Canada (**Acceptance Rate:** 15%).

**C5.** P. A. Karakasis<sup>\*</sup>, **A. Konar**<sup>\*</sup>, (\* equal contribution) and N. D. Sidiropoulos, "Joint graph embedding and alignment with spectral pivot," *Proc. ACM KDD* (Research Track), August 14-18, 2021, Singapore. (Acceptance Rate: 15.6%).

C4. A. Konar, and N. D. Sidiropoulos, "Exploring the subgraph density-size trade-off via the Lovasz extension," *Proc. ACM WSDM*, March 8-12, 2021, Jerusalem, Israel. (Acceptance Rate: 18.6%)

**C3.** A. Konar, and N. D. Sidiropoulos, "Soft Graph Matching: Submodular Relaxation and Lovasz Extension," *Proc. IEEE ICDM*, November 17-20, 2020, Sorrento, Italy. (Acceptance Rate: 9.8%)

**C2. A. Konar**, and N. D. Sidiropoulos, "Mining large quasi-cliques with quality guarantees from vertex neighborhoods," *Proc. ACM KDD* (Research Track), August 23-27, 2020, San Diego. (Acceptance Rate: 16.9%)

**C1. A. Konar**, and N. D. Sidiropoulos, "Iterative graph alignment via supermodular approximation," *Proc. IEEE ICDM*, Nov. 8-11, 2019, Beijing, China. (Acceptance Rate: 18.5%)

## **Journal Articles**

**J11.** M. S. Ibrahim, A. S. Zamzam, **A. Konar**, and N. D. Sidiropoulos, "Cell-edge detection via selective cooperation and generalized canonical correlation", *accepted*, *IEEE Transactions on Wireless Communications*, June 2021, DOI: 10.1109/TWC.2021.3083685.

**J10. A. Konar**, and N. D. Sidiropoulos, "Graph matching via the lens of supermodularity," *accepted, IEEE Transactions on Knowledge and Data Engineering*, July 2020, DOI: 10.1109/TKDE.2020.3008128.

**J9.** M. S. Ibrahim, **A. Konar**, N. D. Sidiropoulos, "Fast algorithms for joint multicast beamforming and antenna selection," *IEEE Transactions on Signal Processing*, vol. 66, no. 18, pp. 1897–1909, March 2020.

**J8. A. Konar**, and N. D. Sidiropoulos, "A simple and effective approach for transmit antenna selection in multi-user massive MIMO leveraging submodularity," *IEEE Transactions on Signal Processing*, vol. 66, no. 18, pp. 4869–4883, Sept. 2018.

**J7.** Y. Shi, **A. Konar**, N. D. Sidiropoulos, X.-P. Mao, and Y.-T. Liu, "Learning to beamform for minimum outage," *IEEE Transactions on Signal Processing*, vol. 66, no. 19, pp. 5180–5193, Sept. 2018.

**J6. A. Konar**, and N. D. Sidiropoulos, "First-order methods for fast Feasibility Pursuit of non-convex QCQPs," *IEEE Transactions on Signal Processing*, vol. 65, no. 22, pp. 5927–5941, Nov. 2017.

J5. A. Konar, and N. D. Sidiropoulos, "Fast approximation algorithms for a class of non-convex QCQP problems using first-order Methods," *IEEE Transactions on Signal* 

Processing, vol. 65, no. 13, pp. 3494–3509, July 2017.

J4. A. Konar, and N. D. Sidiropoulos, "Parametric frugal sensing for Autoregressive and Autoregressive Moving Average power spectra," *IEEE Transactions on Signal Processing*, vol. 64, no. 20, pp. 5353–5366, Oct. 2016.

**J3. A. Konar**, and N. D. Sidiropoulos, "Hidden convexity in QCQP with Toeplitz-Hermitian quadratics," *IEEE Signal Processing Letters*, vol. 22, no. 10, pp. 1623–1627, Oct. 2015.

**J2.** O. Mehanna, K. Huang, B. Gopalakrishnan, **A. Konar**, and N.D. Sidiropoulos, "Feasible Point Pursuit and successive approximation of non-convex QCQPs," *IEEE Signal Processing Letters*, vol. 22, pp. 804–808, July 2015.

**J1. A. Konar**, N. D. Sidiropoulos, and O. Mehanna, "Parametric frugal sensing of power spectra for Moving Average Models," *IEEE Transactions on Signal Processing*, vol. 63, no. 5, pp. 1073–1085, March 2015.

## **Refereed Conference Articles in Signal Processing**

**C16.** N. D. Sidiropoulos, P. Karakasis, and **A. Konar**, "Finding the smallest or largest element of a tensor from its low-rank factors," *under review*.

**C15.** F. Almutairi, **A. Konar**, A. S. Zamzam, and N. D. Sidiropoulos, "Phased: Phase-Aware Submodularity-Based Energy Disaggregation," *Proc. NILM 2020*, Nov. 18, 2020, Yokohama, Japan.

**C14. A. Konar**, and N.D. Sidiropoulos, "Fast optimization of Boolean quadratic functions via iterative submodular approximation and max-flow," *Proc. IEEE ICASSP*, May 12-17, 2019, Brighton, United Kingdom.

C13. M. Salah, A. Konar, M. Hong, and N. D. Sidiropoulos, "Mirror-Prox SCA algorithm for multicast beamforming and antenna selection," *Proc. IEEE SPAWC 2018*, June 25-28, Kalamata, Greece (Finalist for best student paper award).

C12. K. Slavakis, A. Konar, and N. D. Sidiropoulos, "Fast projection-based solvers for the non-convex quadratically constrained quadratic feasibility problem," *Proc. IEEE ICASSP 2017*, April 15-20, 2018, Calgary, Canada.

**C11.** F. Almutairi, **A. Konar**, and N. D. Sidiropoulos, "Scalable energy disaggregation via successive submodular approximation," *Proc. IEEE ICASSP 2017*, April 15-20, 2018, Calgary, Canada.

**C10.** Y. Shi, **A. Konar**, N. D. Sidiropoulos, X.-P.Mao, and Y.-T Liu, "Transmit beamforming for minimum outage via stochastic approximation," *invited paper at IEEE CAMSAP 2017*, December 10-13, 2017, Curacao, Dutch Antilles.

**C9. A. Konar**, A. S. Zamzam, and N. D. Sidiropoulos, "Decentralized power system state estimation via non-convex multi-agent optimization," *invited paper at IEEE GLOBALSIP 2017*, November 14-16, 2017, Montreal, Canada.

**C8. A. Konar**, and N. D. Sidiropoulos, "Greed is good: Leveraging submodularity for antenna selection in Massive MIMO," *Asilomar Conference on Signals, Systems and Computers*, October 29 - November 1, 2017, Pacific Grove, CA.

**C7. A. Konar**, and N. D. Sidiropoulos, "Fast Feasibility Pursuit for non-convex QCQPs via first-order methods,", *Proc. IEEE ICASSP 2017*, March 5-9, 2016, New Orleans, USA.

**C6.** M. A. Vazquez, **A. Konar**, L. Blanco, N. D. Sidiropoulos, and A. I. Perez-Neira, "Non-convex consensus ADMM for satellite precoder design," *Proc. IEEE ICASSP* 2017, March 5-9, 2016, New Orleans, USA.

**C5. A. Konar**, and N. D. Sidiropoulos, "A fast approximation algorithm for singlegroup multicast beamforming with large antenna arrays," *invited paper at IEEE SPAWC* 2016, July 3-6, 2016, Edinburgh, UK.

C4. A. Konar, and N. D. Sidiropoulos, "Parametric frugal sensing of autoregressive power spectra," *Proc. IEEE ICASSP 2016*, March 20-25, 2016, Shanghai, China.

**C3. A. Konar**, and N. D. Sidiropoulos, "Distributed compression and maximumlikelihood reconstruction of finite autocorrelation sequences," *Asilomar Conference on Signals, Systems and Computers*, November 8-11, 2015, Pacific Grove, CA.

**C2.** A. Konar, R. Sun, N. D. Sidiropoulos, and Z.-Q. Luo, "Interference alignment via Feasible Point Pursuit," *Proc. IEEE SPAWC 2015*, June 28-July 1, 2015, Stockholm, Sweden.

C1. A. Konar, and N. D. Sidiropoulos, "Parametric frugal sensing of moving average power spectra," *Proc. IEEE ICASSP 2015*, April 19-24, 2015, Brisbane, Australia.

REVIEWING IEEE Transactions on Signal Processing, IEEE Transactions on Information Theory, ACTIVITIES IEEE Transactions on Wireless Communications, IEEE Transactions on Communications, IEEE Signal Processing Letters, IEEE Communications Letters, ICASSP, ISIT, ICC, NeurIPS, KDD, SDM.