

CURRICULUM VITAE

Nicholas D. Sidiropoulos

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Sep. 25, 2025

PERSONAL DATA

Date and place of birth: December 25, 1965; Thessaloniki, Greece.

Marital Status: Married, two sons.

U.S. & Greek Citizen.

EDUCATION

Ph.D. in Electrical Engineering, August 1992, University of Maryland, College Park.

M.S. in Electrical Engineering, May 1990, University of Maryland, College Park.

Diploma in Electrical Engineering (top grade in class - 9/10), July 1988, Aristotle University of Thessaloniki, Greece.

ACADEMIC POSITIONS

Professor, Dept. of Electrical and Computer Engineering, University of Virginia, Charlottesville, VA, Aug. 2017 – present. Appointed Louis T. Rader Professor, Aug. 2018.

Department Chair, Dept. of Electrical and Computer Engineering, University of Virginia, Charlottesville, VA, Aug. 2017 – Sep. 2021.

Professor, Dept. of Electrical and Computer Engineering & Digital Technology Center, University of Minnesota, Minneapolis, MN, Sep. 2011 – Aug. 2017. Appointed ADC Chair in Digital Technology (Jan. 2015 – Aug. 2017).

Professor, Dept. of Electronic and Computer Engineering, Technical University of Crete, Chania, Crete - Greece, Feb. 2002 – Aug. 2011.

Department Chair, Dept. of Electronic and Computer Engineering, Technical University of Crete, Chania, Crete - Greece, Sep. 2005 - Aug. 2007 (Vice-Chair, Sep. 2003 - Aug. 2005).

Associate Director, Telecommunication Systems Institute (TSI), Technical University of Crete, Chania, Crete - Greece, Nov. 2005 – Aug. 2011.

Associate Professor, Dept. of Electrical and Computer Engineering, University of Minnesota, Minneapolis, Jan. 2000 – Feb. 2002.

Assistant Professor, Dept. of Electrical Engineering, University of Virginia, Charlottesville VA, July 1997 – Jan. 2000.

Assistant Research Scientist, Institute for Systems Research, University of Maryland, College Park, MD, January 1996 – July 1997. Also, Adjunct Professor, Dept. of Electrical Engineering, University of Maryland, College Park, MD, January 1995 – June 1997.

Post-Doctoral Research Associate, Institute for Systems Research, University of Maryland, College Park, MD, August 1994 – January 1996.

Lecturer, Hellenic Air Force Academy, October 1992 – October 1993 (September 1992 – June 1994, completed Greek military service requirements).

Fulbright Fellow, September 1988 – September 1992. Also, Research Assistant, Department of Electrical Engineering and Institute for Systems Research, University of Maryland, College Park, MD, June 1989 – September 1992.

CONSULTING

Consultant, Globespan Inc., Red Bank, NJ, 2000 - 2001: Crosstalk cancelation for DSL modems. Consultant, General Dynamics / Advanced Information Systems, Bloomington, MN, 2002: Frequency hopping radio engineering.

INDUSTRY EXPERIENCE

Member of the Technical Staff, Systems Integration Division, G-Systems Ltd., Athens, Greece, October 1993 - June 1994. Design and development (in a Unix/X/Motif/C - based environment) of integrated control and monitoring systems for military-grade wide-area radio communication networks.

ACADEMIC FELLOWSHIPS

- (1) September 1988 – May 1989, Fulbright Fellowship.
- (2) September 1984 – July 1988, from the Greek National Fellowship Foundation.

ACADEMIC AWARDS

- (1) Technical Chamber of Greece Outstanding Student Award (1988).
- (2) University of Maryland College Park IEEE student chapter Fall 1995 teaching award.

RESEARCH HONORS AND AWARDS

Paper awards and distinctions:

- (1) IEEE Signal Processing Society 2001 Best Paper Award, for the paper “Parallel Factor Analysis in Sensor Array Processing”, by N.D. Sidiropoulos, R. Bro, and G. Giannakis, published in the IEEE Trans. on Signal Processing, August 2000.
- (2) IEEE Signal Processing Society 2007 Best Paper Award, for the paper “On Down-link Beamforming with Greedy User Selection: Performance Analysis and a Simple New Algorithm”, by G. Dimic, and N.D. Sidiropoulos, published in IEEE Trans. on Signal Processing, Oct. 2005.

- (3) IEEE Signal Processing Society 2011 Best Paper Award, for the paper “Transmit Beamforming for Physical Layer Multicasting”, by N.D. Sidiropoulos, T.N. Davidson, and Z.-Q. Luo, published in IEEE Trans. on Signal Processing, June 2006.
- (4) IEEE SPAWC 2012 Best Student Paper Award to Omar Mehanna, for the paper “Multicast beamforming with antenna selection”, co-authored with N.D. Sidiropoulos, and G. Giannakis.
- (5) IEEE ICASSP 2014 Best Student Paper Award (third prize) to Xiao Fu and John Tranter, for the paper “Blind Spectra Separation and Direction Finding for Cognitive Radio Using Temporal Correlation-domain ESPRIT”, co-authored with N.D. Sidiropoulos, and W.-K. Ma.
- (6) IEEE CAMSAP 2015 Best Student Paper Award (second prize) to Bo Yang for the paper “Joint Factor Analysis and Latent Clustering”, co-authored with Xiao Fu, and N.D. Sidiropoulos.
- (7) IEEE Data Science Workshop (DSW) 2019 Best Student Paper Award to Magda Amiridi and Nikos Kargas for the paper “Statistical Learning Using Hierarchical Modeling of Probability Tensors”, co-authored with N.D. Sidiropoulos.
- (8) In 2017, Google Scholar released its *Classic Papers: Articles That Have Stood The Test of Time*. Our paper “Transmit Beamforming for Physical Layer Multicasting” published in 2006 is one of those classic papers: https://scholar.google.com/citations?view_op=list_classic_articles&hl=en&by=2006&vq=eng_signalprocessing
- (9) In March 2019, the IEEE Communications Society has compiled and published a list of *Best Readings in Machine Learning in Communications* <https://www.comsoc.org/publications/best-readings/machine-learning-communications>. “Learning to Optimize: Training Deep Neural Networks for Interference Management” (by H. Sun, X. Chen, Q. Shi, M. Hong, X. Fu, and N.D. Sidiropoulos, IEEE Transactions on Signal Processing, vol. 66, no. 20, pp. 5438-5453, October 2018) is included in the list. It was one of the earliest to consider power control and resource allocation and optimization problems using deep learning.
- (10) Our paper “Tensor Decomposition for Signal Processing and Machine Learning” , published in IEEE Trans. on Signal Processing (TSP) in 2017, is ranked #1 in Google Scholar metrics for TSP, for the last 5 years: https://scholar.google.com/citations?hl=en&vq=eng_signalprocessing&view_op=list_hcore&venue=ttqq7mAN71EJ.2020 It also topped the charts of most popular / most frequently accessed papers: <https://ieeexplore.ieee.org/xpl/topAccessedArticles.jsp?punumber=78>
- (11) IEEE Signal Processing Society 2022 Best Paper Award, for the paper , “Learning to Optimize: Training Deep Neural Networks for Interference Management,” by Haoran Sun, Xiangyi Chen, Qingjiang Shi, Mingyi Hong, Xiao Fu, and Nicholas D. Sidiropoulos, IEEE Trans. on Signal Processing, Oct. 2018.
- (12) IEEE Signal Processing Society 2022 Donald G. Fink Overview Paper Award, for the paper “Tensor Decomposition for Signal Processing and Machine Learning,” by Nicholas D. Sidiropoulos, Lieven De Lathauwer, Xiao Fu, Kejun Huang, Evangelos E. Papalexakis, Christos Faloutsos, IEEE Transactions on Signal Processing, July 2017.
- (13) IEEE CAMSAP 2023 First Prize Student Paper Award to Paris Karakasis for the paper “Clustering on the Stiefel Manifold With Symmetric Block Term Decomposition”, co-authored with N.D. Sidiropoulos.

Career awards and distinctions:

- (14) NSF/CAREER Award, 1998.
- (15) Distinguished Lecturer of the IEEE Signal Processing Society (2008-2009).
- (16) Fellow, IEEE *for contributions to Signal Processing for Communications*, Nov. 2008.
- (17) IEEE Signal Processing Society Meritorious Service Award (2010), “for dedicated service and leadership in the field of signal processing for communications and networking” (presented at the ICASSP Conference, Prague, May 2011).
- (18) 2013 Distinguished Alumni Award, Electrical and Computer Engineering Department, University of Maryland, College Park.
- (19) Fellow, European Association for Signal Processing (EURASIP), *for contributions to tensor decomposition and signal processing for communications*, 2014.
- (20) Appointed ADC Chair in Digital Technology, Jan. 2015 - Dec. 2019.
- (21) Appointed Louis T. Rader Chair Professor in Electrical Engineering, Aug. 25, 2018.
- (22) Technical Achievement Award of the European Association for Signal Processing (EURASIP) *for contributions to tensor decomposition, beamforming, and spectral analysis*, Feb. 2022.
- (23) IEEE SPS Claude Shannon - Harry Nyquist Technical Achievement Award *for exemplary contributions to tensor decomposition, beamforming, and spectral analysis*, Dec. 2022.
- (24) 2023 Distinguished Researcher Award, University of Virginia. *Recognizes a faculty member for their excellence in research through significant discoveries and scholarship. It is intended for scholars who are making an impact in their field and on society and are acknowledged as a leader in their field.*
- (25) 2024 Outstanding Researcher Award, University of Virginia.

RESEARCH

Dr. Sidiropoulos’ research interests are in signal processing theory and algorithms, wireless communications, optimization and machine learning, with emphasis on matrix and tensor decompositions and their applications.

PUBLICATIONS (in reverse chronological order)

Summary: Journal: 178 (173 published / to appear, 5 under review); Conference: 240; Patents: 7 (4 granted, 3 submitted); Edited Books: 2; Book Chapters: 6.

Citations: $\sim 28,584$ in Google Scholar; $h = 73$.

Journal papers

- (178) Q. Lu, **N.D. Sidiropoulos**, A. Konar, “On Densest k -Subgraph Mining and Diagonal Loading”, submitted to *SIAM Mathematics of Data Science (SIMODS)*, Aug. 2025.
- (177) Q. Lu, **N.D. Sidiropoulos**, A. Konar, “The Vertex-Attribute-Constrained Densest k -Subgraph Problem”, submitted, July 16, 2025.

- (176) P.A. Karakasis, **N.D. Sidiropoulos**, “Subspace Clustering of Subspaces: Unifying Canonical Correlation Analysis and Subspace Clustering”, submitted to *IEEE Trans. on Signal Processing*, June 16, 2025.
- (175) E. Kariotakis, **N.D. Sidiropoulos**, A. Konar, “Fairness-Aware Dense Subgraph Discovery”, *Transactions on Machine Learning Research*, April 2025.
- (174) S. Peppas, N. Razavi, **N.D. Sidiropoulos**, “Broadband Signal Alignment for Interference Resilient Multicarrier Communication”, *IEEE Wireless Communication Letters*, early access, doi: 10.1109/LWC.2025.3528724.
- (173) A. Konar, **N.D. Sidiropoulos**, “Optimal Quasi-Clique: Links to Densest k Subgraph and Community Mining”, submitted to *IEEE Trans. on Knowledge and Data Engineering*, July 2024.
- (172) S. Peppas, P. Karakasis, **N.D. Sidiropoulos** and D. Cabric, “Signal Alignment in Frequency-hopped IoT Networks”, *IEEE Trans. on Wireless Communications*, early access, doi: 10.1109/TWC.2025.3535682.
- (171) X.-Y. Wang, X.-P. Li, H.-C. So, **N.D. Sidiropoulos**, “Tensor Completion Network for Visual Data”, *IEEE Trans. on Signal Processing*, doi: 10.1109/TSP.2024.3524568, early access, Jan. 1, 2025.
- (170) M.-S. Ibrahim, P.A. Karakasis, **N.D. Sidiropoulos**, “A link between Multiuser MMSE and Canonical Correlation Analysis”, *IEEE Wireless Communication Letters*, vol. 13, no. 1, pp. 44-48, Jan. 2024, doi: 10.1109/LWC.2023.3319292.
- (169) **N.D. Sidiropoulos**, P.A. Karakasis, A. Konar, “Minimizing low-rank models of high-order tensors: hardness, span, tight relaxation and applications”, *IEEE Trans. on Signal Processing*, vol. 72, pp. 129-142, 2024, doi: 10.1109/TSP.2023.3338062.
- (168) A. Konar, **N.D. Sidiropoulos**, “Mining Triangle-Dense Subgraphs of a Fixed Size: Hardness, Lovász extension and Applications”, *IEEE Trans. on Knowledge and Data Engineering*, doi: 10.1109/TKDE.2024.3444608, Sep. 2024 (early access).
- (167) A. Aidini, G. Tsagkatakis, **N.D. Sidiropoulos**, and P. Tsakalides, “Classification via Tensor Completion”, submitted to *IEEE Trans. on Signal Processing*, Jan. 11, 2023.
- (166) P. Karakasis, **N.D. Sidiropoulos**, “Revisiting Deep Generalized Canonical Correlation Analysis”, *IEEE Trans. on Signal Processing*, vol. 71, pp. 4392-4406, 2023, doi: 10.1109/TSP.2023.3333212.
- (165) Z. Almquist, T.-D. Nguyen, M. Sorensen, X. Fu, **N.D. Sidiropoulos**, “Uncovering migration systems through spatio-temporal tensor co-clustering”, *Scientific Reports*, vol. 14, no. 1, p. 26861, Nov. 6, 2024, doi: 10.1038/s41598-024-78112-z.
- (164) X.-P. Li, Z.-Y. Wang, Z.-L. Shi, H.-C. So, **N.D. Sidiropoulos**, “Robust Tensor Completion via Capped Frobenius Norm”, *IEEE Trans. Neural Networks and Learning Systems*, vol. 35, no. 7, pp. 9700-9712, July 2024, doi: 10.1109/TNNLS.2023.3236415.
- (163) M.S. Ibrahim, A. Hussain, **N.D. Sidiropoulos**, “A Novel Linear Precoder Design for Reliable UL/DL Detection in TDD Cellular Networks”, *IEEE Trans. on Communications*, vol. 70, no. 12, pp. 8167-8180, Dec. 2022, doi: 10.1109/TCOMM.2022.3217129.
- (162) M. Sorensen, **N.D. Sidiropoulos**, A. Swami, “Overlapping Community Detection via Semi-binary Matrix Factorization: Identifiability and Algorithms”, *IEEE Trans. on Signal Processing*, vol. 70, pp. 4321-4336, 2022, doi: 10.1109/TSP.2022.3200215.

- (161) M. Amiridi, N. Kargas, and **N.D. Sidiropoulos**, “Low-rank Characteristic Tensor Density Estimation Part II: Compression and Latent Density Estimation”, *IEEE Trans. on Signal Processing*, vol. 70, pp. 2669-2680, 2022, doi: 10.1109/TSP.2022.3158422.
- (160) M. Amiridi, N. Kargas, and **N.D. Sidiropoulos**, “Low-rank Characteristic Tensor Density Estimation Part I: Foundations”, *IEEE Trans. on Signal Processing*, vol. 70, pp. 2654-2668, 2022, doi: 10.1109/TSP.2022.3175608.
- (159) M. Amiridi, N. Kargas, and **N.D. Sidiropoulos**, “Information-theoretic Feature Selection via Tensor Decomposition and Submodularity”, *IEEE Trans. on Signal Processing*, vol. 69, pp. 6195-6205, 2021, doi: 10.1109/TSP.2021.3125147.
- (158) M.S. Ibrahim, P. Karakasis, and **N.D. Sidiropoulos**, “A Simple and Practical Underlay Scheme for Short-range Secondary Communication”, *IEEE Trans. on Wireless Communications*, 2022, doi: 10.1109/TWC.2022.3181618.
- (157) R. Wu, W.-K. Ma, Y. Li, A.M.-C. So, and **N.D. Sidiropoulos**, “Probabilistic Simplex Component Analysis”, *IEEE Trans. on Signal Processing*, vol. 70, pp. 582-599, 2022, doi: 10.1109/TSP.2021.3133690.
- (156) P. Karakasis, A.P. Liavas, **N.D. Sidiropoulos**, P.G. Simos, and E. Papadaki, “Multi-subject task-related fMRI data processing via a two-stage generalized canonical correlation analysis”, *IEEE Trans. on Image Processing*, vol. 31, pp. 4011-4022, 2022, doi: 10.1109/TIP.2022.3159125.
- (155) M. Sorensen, C. Kanatsoulis, and **N.D. Sidiropoulos**, “Generalized Canonical Correlation Analysis: A Subspace Intersection Approach”, *IEEE Trans. on Signal Processing*, vol. 69, pp. 2452-2467, 2021, doi: 10.1109/TSP.2021.3061218.
- (154) N. Kargas, and **N.D. Sidiropoulos**, “Supervised Learning and Canonical Decomposition of Multivariate Functions”, *IEEE Trans. on Signal Processing*, vol. 69, pp. 1097-1107, 2021, doi: 10.1109/TSP.2021.3055000.
- (153) F. Almutairi, C. Kanatsoulis, and **N.D. Sidiropoulos**, “PREMA: Principled Tensor Data Recovery from Multiple Aggregated Views”, *IEEE Journal on Selected Topics in Signal Processing*, vol. 15, no. 3, pp. 535-549, April 2021, doi: 10.1109/JSTSP.2021.3056918.
- (152) M.S. Ibrahim, A.S. Zamzam, A. Konar, and **N.D. Sidiropoulos**, “Cell-Edge Detection via Selective Cooperation and Generalized Canonical Correlation”, *IEEE Transactions on Wireless Communications*, vol. 20, no. 11, pp. 7431-7444, November. 2021, doi: 10.1109/TWC.2021.3083685.
- (151) F. Zhou, A.S. Zamzam, S.H. Low, and **N.D. Sidiropoulos**, “Exactness of OPF Relaxation on Three-Phase Radial Networks With Delta Connections”, *IEEE Trans. on Smart Grid*, vol. 12, no. 4, pp. 3232-3241, July 2021, doi: 10.1109/TSG.2021.3066530
- (150) M. Sorensen, **N.D. Sidiropoulos**, “Multi-set Low-rank Factorizations with Shared and Unshared Components”, *IEEE Trans. on Signal Processing*, vol. 68, pp. 5122-5137, 2020, doi: 10.1109/TSP.2020.3020408.
- (149) A. Konar, and **N.D. Sidiropoulos**, “Graph matching via the lens of supermodularity”, *IEEE Trans. on Knowledge and Data Engineering*, doi:10.1109/TKDE.2020.3008128
- (148) C. Qian, A. Emad, **N.D. Sidiropoulos**, “A Recursive Framework Predicting the Time-Course of Drug Sensitivity”, *Scientific Reports*, vol. 10, article 17682 (2020). <https://doi.org/10.1038/s41598-020-74725-2>

- (147) M.S. Ibrahim, **N.D. Sidiropoulos**, “Reliable Detection of Unknown Cell-Edge Users via Canonical Correlation Analysis”, *IEEE Trans. on Wireless Communications*, vol. 19, no. 6, pp. 4170-4182, June 2020, doi: 10.1109/TWC.2020.2980511.
- (146) C. Qian, X. Fu, **N.D. Sidiropoulos**, “Amplitude Retrieval for Channel Estimation of MIMO Systems With One-Bit ADCs”, *IEEE Signal Processing Letters*, vol. 26, no. 11, pp. 1698-1702, Nov. 2019. doi: 10.1109/LSP.2019.2945490
- (145) Y. Shen, X. Fu, G.B. Giannakis, **N.D. Sidiropoulos**, “Topology Identification of Directed Graphs via Joint Diagonalization of Correlation Matrices”, *IEEE Transactions on Signal and Information Processing over Networks*, Special Issue on Network Topology Inference, vol. 6, pp. 271-283, 2020, doi: 10.1109/TSIPN.2020.2984131.
- (144) B. Yang, X. Fu, **N.D. Sidiropoulos**, K. Huang, “Learning Nonlinear Mixtures: Identifiability and Algorithm”, *IEEE Trans. on Signal Processing*, available online doi: 10.1109/TSP.2020.2989551.
- (143) D. Gunduz, P. de Kerret, **N.D. Sidiropoulos**, D. Gesbert, C. Murthy, M. van der Schaar, “Machine Learning in the Air”, *IEEE J. on Selected Areas in Communications*, special issue on Machine Learning in Wireless Communication, vol. 37, no. 10, pp. 2184-2199, 2019.
- (142) M. Sorensen, L. De Lathauwer, **N.D. Sidiropoulos**, “Bilinear factorizations subject to monomial equality constraints via tensor decompositions”, *Linear Algebra and its Applications* vol. 621, pp. 296-333, 2021. doi: 10.1016/j.laa.2021.03.022
- (141) A.S. Zamzam, **N.D. Sidiropoulos**, “Physics-Aware Neural Networks for Distribution System State Estimation”, *IEEE Trans. on Power Systems*, early access, doi: 10.1109/TPWRS.2020.2988352.
- (140) F. Yang, F.M. Almutairi, H.-A. Song, C. Faloutsos, **N.D. Sidiropoulos**, and V. Zadorozhny, “TurboLift: Fast Accuracy Lifting for Historical Data Recovery”, *VLDB Journal*, March 2020, <https://doi.org/10.1007/s00778-020-00609-6>.
- (139) B. Yaman, S. Weingartner, N. Kargas, **N.D. Sidiropoulos**, M. Akcakaya, “Low-Rank Tensor Models for Regularized High-Dimensional MRI: Application to Dynamic Cardiac T1 Mapping”, *IEEE Trans. on Computational Imaging*, vol. 6, pp. 194-207, 2020, doi: 10.1109/TCI.2019.2940916.
- (138) C. Kanatsoulis, X. Fu, **N.D. Sidiropoulos**, M. Akcakaya, “Tensor Completion from Regular Sub-Nyquist Samples”, *IEEE Trans. on Signal Processing*, vol. 68, pp. 1-16, 2020. doi: 10.1109/TSP.2019.2952044
- (137) C. Qian, X. Fu, and **N.D. Sidiropoulos**, “Algebraic Channel Estimation Algorithms for FDD Massive MIMO systems”, *IEEE Journal of Selected Topics in signal Processing*, vol. 13, no. 5, pp. 961-973, Sept. 2019. doi: 10.1109/JSTSP.2019.2930893
- (136) M.S. Ibrahim, A. Konar, and **N.D. Sidiropoulos**, “Fast Algorithms for Joint Multicast Beamforming and Antenna Selection in Massive MIMO”, *IEEE Trans. on Signal Processing*, vol. 68, pp. 1897-1909, 2020, doi: 10.1109/TSP.2020.2979545.
- (135) B. Yang, A.S. Zamzam, and **N.D. Sidiropoulos**, “Large Scale Tensor Factorization via Parallel Sketches”, *IEEE Trans. on Knowledge and Data Engineering*, early access, doi: 10.1109/TKDE.2020.2982144.

- (134) A.S. Zamzam, X. Fu, and **N.D. Sidiropoulos**, “Data-Driven Learning-Based Optimization for Distribution System State Estimation”, *IEEE Trans. on Power Systems*, vol. 34, no. 6, pp. 4796-4805, Nov. 2019. doi: 10.1109/TPWRS.2019.2909150
- (133) V. Ioannidis, A.S. Zamzam, G.B. Giannakis, and **N.D. Sidiropoulos**, “Coupled Graphs and Tensor Factorization for Recommender Systems and Community Detection”, *IEEE Trans. on Knowledge and Data Engineering*, doi: 10.1109/TKDE.2019.2941716.
- (132) C. Qian, X. Fu, **N.D. Sidiropoulos**, and Y. Yang, “Tensor-Based Channel Estimation for Dual-Polarized Massive MIMO Systems”, *IEEE Trans. on Signal Processing*, vol. 66, no. 24, pp. 6390–6403, Dec. 15, 2018, DOI: 10.1109/TSP.2018.2873506
- (131) C. Kanatsoulis, X. Fu, **N.D. Sidiropoulos**, and W.-K. Ma, “Hyperspectral Super-resolution: A Coupled Tensor Factorization Approach”, *IEEE Trans. on Signal Processing*, vol. 66, no. 24, pp. 6503–6517, Dec. 15, 2018. DOI: 10.1109/TSP.2018.2876362
- (130) X. Fu, K. Huang, **N.D. Sidiropoulos**, and W.-K. Ma, “Nonnegative Matrix Factorization for Signal and Data Analytics: Identifiability, Algorithms, and Applications”, *IEEE Signal Processing Magazine*, vol. 36, no. 2, pp. 39–80, March 2019. DOI: 10.1109/MSP.2018.2877582
- (129) C. Kanatsoulis, X. Fu, **N.D. Sidiropoulos**, and M. Hong, “Structured SUMCOR Multiview Canonical Correlation Analysis for Large-Scale Data”, *IEEE Trans. on Signal Processing*, vol. 67, no. 2, pp. 306–319, Jan. 15, 2019. DOI: 10.1109/TSP.2018.2878544
- (128) H. Sun, X. Chen, Q. Shi, M. Hong, X. Fu, **N.D. Sidiropoulos**, “Learning to Optimize: Training Deep Neural Networks for Interference Management”, *IEEE Trans. on Signal Processing*, vol. 66, no. 20, pp. 5438-5453, 2018. DOI: 10.1109/TSP.2018.2866382
- (127) N. Kargas, **N.D. Sidiropoulos**, and X. Fu, “Tensors, Learning, and ‘Kolmogorov Extension’ for Finite-alphabet Random Vectors”, *IEEE Trans. on Signal Processing*, vol. 66, no. 18, pp. 4854-4868, 2018. DOI: 10.1109/TSP.2018.2862383
- (126) A. Konar, and **N.D. Sidiropoulos**, “A Simple and Effective Approach for Transmit Antenna Selection in Multi-user Massive MIMO Leveraging Submodularity”, *IEEE Trans. on Signal Processing*, vol. 66, no. 18, pp. 4869-4883, 2018.
- (125) X. Fu, K. Huang, and **N.D. Sidiropoulos**, “On identifiability of nonnegative matrix factorization”, *IEEE Signal Processing Letters*, vol. 25, no. 3, pp. 328–332, March 2018.
- (124) A.S. Zamzam, E. Dall’Anese, C. Zhao, J.A. Taylor, and **N.D. Sidiropoulos**, “Optimal Water-Power Flow Problem: Formulation and Distributed Optimal Solution”, *IEEE Trans. on Control of Network Systems*, to appear. DOI: 10.1109/TCNS.2018.2792699
- (123) T. Qiu, X. Fu, **N.D. Sidiropoulos**, and D. Palomar, “MISO Channel Estimation and Tracking from Received Signal Strength Feedback”, *IEEE Trans. on Signal Processing*, vol. 66, no. 7, pp. 1691–1704, April 1, 2018.
- (122) Y. Shi, A. Konar, **N.D. Sidiropoulos**, X.-P. Mao, and Y.-T. Liu, “Learning to Beamform for Minimum Outage”, *IEEE Trans. on Signal Processing*, vol. 66, no. 19, pp. 5180-5193, 2018. DOI: 10.1109/TSP.2018.2865408
- (121) X. Fu, K. Huang, E.E. Papalexakis, H.-A. Song, P. Talukdar, **N.D. Sidiropoulos**, Christos Faloutsos, and Tom Mitchell, “Efficient and Distributed Generalized Canonical Correlation Analysis for Big Multiview Data”, *IEEE Trans. on Knowledge and Data Engineering*, to appear, 2018. DOI: 10.1109/TKDE.2018.2875908

- (120) G. Wang, A.S. Zamzam, G.B. Giannakis, and **N.D. Sidiropoulos**, “Power System State Estimation via Feasible Point Pursuit: Algorithms and Cramer-Rao Bound”, *IEEE Trans. on Signal Processing*, vol. 66, no. 6, pp. 1649-1658, Mar. 2018.
- (119) P. Alevizos, X. Fu, **N.D. Sidiropoulos**, Y. Yang, and A. Bletsas, “Limited Feedback Channel Estimation in Massive MIMO with Non-uniform Directional Dictionaries”, *IEEE Trans. on Signal Processing*, vol. 66, no. 19, pp. 5127-5141, 2018. DOI: 10.1109/TSP.2018.2865412
- (118) A. Konar and **N.D. Sidiropoulos**, “First-Order Methods for Fast Feasibility Pursuit of Non-convex QCQPs”, *IEEE Trans. on Signal Processing*, vol. 65, no. 22, pp. 5927 - 5941, Nov.15, 15 2017.
- (117) X. Fu, K. Huang, **N.D. Sidiropoulos**, Q. Shi, and M. Hong, “Anchor-Free Correlated Topic Modeling”, *IEEE Trans. on Pattern Analysis and Machine Intelligence*, to appear. DOI: 10.1109/TPAMI.2018.2827377
- (116) X. Fu, K. Huang, M. Hong, **N.D. Sidiropoulos**, and A.M.-C. So, “Scalable and Flexible Multiview MAX-VAR Canonical Correlation Analysis”, *IEEE Trans. on Signal Processing*, vol. 65, no. 16, pp. 4150-4165, Aug. 15, 2017.
- (115) F. Almutairi, **N.D. Sidiropoulos**, and G. Karypis, “Context-Aware Recommendation Based Learning Analytics Using Tensor and Coupled Matrix Factorization”, *IEEE Journal on Selected Topics in Signal Processing*, special issue on Signal Processing and Machine Learning for Education and Human Learning at Scale, vol. 11, no. 5, pp. 729–741, Aug. 2017. DOI: 10.1109/JSTSP.2017.2705581
- (114) A.S. Zamzam, **N.D. Sidiropoulos**, and E. Dall’Anese, “Beyond Relaxation and Newton-Raphson: Solving AC OPF for Multi-phase Systems with Renewables”, *IEEE Trans. on Smart Grid*, vol. 9, no. 5, pp. 3966-3975, 2018.
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- (239) P. Karakasis, **N.D. Sidiropoulos**, “Graph Convolutional Subspace Clustering of Subspaces for Hyperspectral Image Clustering”, in *Proc. IEEE WHISPERS*, Nov. 12-14. 2025, Bellaterra (Barcelona), Spain.
- (238) **N.D. Sidiropoulos**, K. Lynch, “Linearly Precoded Signal Alignment: How to Excise Interference with Little Rate Loss”, in *Proc. IEEE SPAWC*, 7-10 July 2025, Surrey, UK.
- (237) **N.D. Sidiropoulos**, Y. Tang, “Interference-resilient Hybrid multi-antenna ARQ”, in *Proc. IEEE ICASSP*, April 6-11, 2025, Hyderabad, India.

- (236) S. Peppas, **N.D. Sidiropoulos**, “Adaptive Canonical Correlation Analysis with Application to Time Synchronization for Signal Alignment”, in *Proc. IEEE ICASSP*, April 6-11, 2025, Hyderabad, India.
- (235) Q. Lu, A. Konar, **N.D. Sidiropoulos**, “Densest k -Subgraph Mining via a Provably Tight Relaxation”, in *Proc. AAAI 2025*, Feb. 27 - Mar. 4, 2025, Philadelphia, PA (acceptance rate: 23.4%).
- (234) N. Razavi, S. Peppas, P. Karakasis, **N.D. Sidiropoulos**, “Multiview Analog FM Radio Underlay”, in *Proc. 58th Asilomar Conference on Signals, Systems and Computers*, Oct. 27 - 30, 2024, Pacific Grove, CA.
- (233) P. Karakasis, **N.D. Sidiropoulos**, “Multivariate Density Estimation using Low-rank Fejer-Riesz Factorization”, in *Proc. IEEE ICASSP*, April 14-19, 2024, Seoul, Korea.
- (232) S. Peppas, **N.D. Sidiropoulos**, “Binary Signal Alignment: Optimal Solution is Polynomial-time and Linear-time Solution is Quasi-optimal”, in *Proc. IEEE ICASSP*, April 14-19, 2024, Seoul, Korea.
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- (227) C. Shi, C. Shen, **N.D. Sidiropoulos**, “On High-Dimensional and Low-Rank Tensor Bandits”, in *Proc. IEEE ISIT*, June 25-30, 2023, Taipei, Taiwan.
- (226) M. Sorensen, **N.D. Sidiropoulos**, “Radio-astronomy imaging and interference excision using tensor decomposition and canonical correlation analysis”, in *Proc. IEEE ICASSP*, June 4-9, 2023, Rhodes Island, Greece.
- (225) M. Amiridi, C. Qian, **N.D. Sidiropoulos**, L. Glass, “Enrollment Rate Prediction in Clinical Trials based on CDF Sketching and Tensor Factorization tools”, in *Proc. IEEE ICASSP*, June 4-9, 2023, Rhodes Island, Greece.
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- (223) A. Hussain, M.-S. Ibrahim, and **N.D. Sidiropoulos**, “Unsupervised Detection via Artificial Dual-Path Transmission”, in *Proc. 56th Asilomar Conference on Signals, Systems and Computers*, Oct. 30 - Nov. 1, 2022, Pacific Grove, CA.

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- (218) F. Almutairi, B. Yang, and **N.D. Sidiropoulos**, “Xpl-CF: Explainable Embeddings for Feature-based Collaborative Filtering”, in *CIKM 2021*, November 1-5, 2021, Virtual Event, Australia (acceptance rate: 28%).
- (217) P. Karakasis, A. Konar, and **N.D. Sidiropoulos**, “Joint Graph Embedding and Alignment with Spectral Pivot”, in *Proc. KDD*, Aug. 14-18, 2021, Singapore (acceptance rate: 15.5%).
- (216) C. Qian, N. Kargas, J. Sun, C. Xiao, L. Glass, and **N.D. Sidiropoulos**, “Multi-version Tensor Completion for Time-delayed Spatio-temporal Data”, in *Proc. IJCAI*, Montreal, 21st -26th August, 2021 (acceptance rate 13.9%)
- (215) M.-S. Ibrahim, **N.D. Sidiropoulos**, “Secure Low-power IoT Uplink Communication via Unsupervised Signal Alignment”, in *Proc. IEEE Signal Processing Advances in Wireless Communications (SPAWC) Workshop*, Sept. 27-30, 2021, Lucca, Italy.
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- (206) F. Almutairi, A. Konar, A. Zamzam, and **N.D. Sidiropoulos**, “Phased: Phase-Aware Submodularity-Based Energy Disaggregation”, in *Proc. 5th International Workshop on Non-Intrusive Load Monitoring (NILM2020 colocated with ACM BuildSys 2020)*, November 18, 2020. doi: 10.1145/3427771.3427860.
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- (195) A. Konar, and **N.D. Sidiropoulos**, “Iterative Graph Alignment via Supermodular Approximation”, in *Proc. IEEE ICDM*, November 8-11, 2019, Beijing, China (acceptance rate $\approx 20\%$).
- (194) B. Yang, X. Fu, **N.D. Sidiropoulos**, K. Huang, “Unsupervised Learning of Non-linear Mixtures: Identifiability and Algorithm”, in *Proc. Asilomar Conf. on Signals, Systems, and Computers*, Nov. 3-6, 2019, Asilomar Conference Grounds, Monterey, CA, U.S.A.
- (193) M. Bousse, **N.D. Sidiropoulos**, and L. De Lathauwer, “NLS Algorithm for Kronecker - Structured Linear Systems with a CPD Constrained Solution”, in *Proc. EUSIPCO*, A Coruna, Spain, Sept. 2-6, 2019.
- (192) C. Kanatsoulis, and **N.D. Sidiropoulos**, “Large-scale Canonical Polyadic Decomposition via Regular Tensor Sampling”, in *Proc. EUSIPCO*, A Coruna, Spain, Sept. 2-6, 2019.
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- (26) **N.D. Sidiropoulos**, and R. Bro, "User Separation in DS-CDMA Systems with Unknown Long PN Spreading Codes", in *Second IEEE-SPS Workshop on Signal Processing Advances in Wireless Communications (SPAWC99)*, May 9-12, 1999, Annapolis, MD.
- (25) Tao Li, and **N.D. Sidiropoulos**, "Blind Separation of Linear Mixtures of Digital Signals Using Successive Interference Cancellation Iterative Least Squares", in *Proc. 1999 International Conference on Acoustics, Speech, and Signal Processing (ICASSP99)*, Phoenix, Arizona, March 15-19, 1999.
- (24) R. Bro, **N.D. Sidiropoulos**, and G.B. Giannakis, "A Fast Least Squares Algorithm for Separating Trilinear Mixtures", in *ICA '99 - Int. Workshop on Independent Component Analysis and Blind Signal Separation*, Jan. 11-15, 1999, Aussois, France, pp. 289-294.
- (23) **N.D. Sidiropoulos**, G.B. Giannakis, and R. Bro, "Deterministic Waveform Preserving Blind Separation of DS-CDMA Signals Using an Antenna Array", in *Proc. 1998 IEEE Workshop on Statistical Signal and Array Processing (SSAP98)*, September 14-16, Portland, Oregon, pp. 304-307.
- (22) R. Bro, **N.D. Sidiropoulos**, and G.B. Giannakis, "Optimal Joint Azimuth-Elevation and Signal-Array Response Estimation Using Parallel Factor Analysis", in *32nd Asilomar Conf. on Signals, Systems, and Computers*, Nov. 1998, Monterey, CA.
- (21) **N.D. Sidiropoulos**, M.S. Pattichis, A.C. Bovik, and J.W. Havlicek, "COPERM: Transform-Domain Energy Compaction by Optimal Permutation", in *Proc. 1998 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP98)*, May 12-15, Seattle, Washington.
- (20) **N.D. Sidiropoulos**, and R. Bro, "Dynamic Programming Algorithms for a Class of Nonlinear Regression Problems in R^N ", in *Proc. 1998 IEEE DSP Workshop (DSP98)*, August 9-12, 1998, Bryce Canyon National Park, Utah.
- (19) **N.D. Sidiropoulos**, "Optimal Adaptive Scalar Quantization and Image Compression", in *Proc. 1998 Int. Conference on Image Processing (ICIP98)*, October 4-7, Chicago, Illinois.
- (18) **N.D. Sidiropoulos**, "Variable-Rate Optimal Adaptive Scalar Quantization and Image Compression", in *Proc. 1998 Conference on Information Sciences and Systems (CISS98)*, March 18-20, Princeton, NJ.
- (17) C. Faloutsos, H.V. Jagadish, and **N.D. Sidiropoulos**, "Recovering Information from Summary Data", in *Proc. 1997 International Conference on Very Large Databases (VLDB97)* – this is one of the two most prestigious DB conferences - acceptance ratio is 1 in 6 submitted papers.
- (16) Flip Korn, **N.D. Sidiropoulos**, Christos Faloutsos, Eliot Siegel, and Zenon Protopapas, "Fast and Effective Similarity Search in Medical Tumor Databases Using Morphology", in *Proc. SPIE Conference on Multimedia Storage and Archiving Systems*, Nov. 18-19, 1996, Boston, Mass.
- (15) Flip Korn, **N.D. Sidiropoulos**, Christos Faloutsos, Eliot Siegel, and Zenon Protopapas, "Fast Nearest Neighbor Search in Medical Image Databases", in *Proc. 1996 International Conference on Very Large Databases (VLDB96)* – this is one of the two most prestigious DB conferences - acceptance ratio is 1 in 6 submitted papers.

- (14) **N.D. Sidiropoulos**, J.S. Baras, C.A. Berenstein, "Structurally Robust Weak Continuity", in *Proc. 1996 IEEE Signal Processing Workshop on Statistical Signal and Array Processing (SSAP-96)*, June 24-26 1996, Corfu, Greece.
- (13) **N.D. Sidiropoulos**, "Fast Digital Locally Monotonic Regression", in *Proc. 1996 IEEE International Symposium on Circuits and Systems (ISCAS-96)*, May 12-15, 1996, Atlanta, GA.
- (12) **N.D. Sidiropoulos**, J.S. Baras, E. Siegel, S.M. Pomerantz, Z. Protopapas, B.I. Reiner, "Computer-Aided Selection of Window and Level for Filmless Radiology", in *Proc. 1996 Symposium for Computer-Assisted Radiology (S/CAR96)*, June 6-9, 1996, Denver, Colorado.
- (11) **N.D. Sidiropoulos**, "The Viterbi Optimal Runlength-Constrained Approximation Nonlinear Filter", in *Proc. 1996 International Symposium on Mathematical Morphology and Its Application to Image and Signal Processing*, May 11-13, 1996, Atlanta, GA.
- (10) **N.D. Sidiropoulos**, J.S. Baras, C.A. Berenstein, "On Morphological Openings and Closings of Signals in Shaped Noise", in *Proc. 1995 IEEE Int. Conf. on Image Processing (ICIP95)*, October 22-25, 1995, Washington, DC.
- (9) **N.D. Sidiropoulos**, J.S. Baras, C.A. Berenstein, "The Combinatorial Basis of Uniformly Bounded Discrete Random Set Theory", in *Proc. 1995 Conf. On Information Sciences and Systems*, March 22-24, 1995, The Johns Hopkins University, Baltimore, MD 21218.
- (8) **N.D. Sidiropoulos**, J.S. Baras, C.A. Berenstein, "Some new results on Optimality and Consistency of Morphological Openings and Closings", in *Proc. SPIE's 40th Annual Meeting*, SPIE vol. 2568, July 9-14, 1995, San Diego, CA.
- (7) **N.D. Sidiropoulos**, D. Meleas, and T. Stragas, "Multiframe MAP Signal Estimation in Morphologically Smooth Images", in *Proc. 1995 IEEE Workshop on Nonlinear Signal and Image Processing*, June 20-22, 1995, Neos Marmaras, Halkidiki, Greece.
- (6) **N.D. Sidiropoulos**, J.S. Baras, C.A. Berenstein, "Optimal Filtering of Digital Binary Images Corrupted by Union/Intersection Noise", in *Proc. of 31st IEEE Conference on Decision and Control*, Tucson, Arizona, December 16-18, 1992.
- (5) **N.D. Sidiropoulos**, J.S. Baras, C.A. Berenstein, "Optimal Morphological Filters for Discrete Random Sets under a Union or Intersection Noise Model", in *Proc. of Conference on Visual Communications and Image Processing*, SPIE vol. 1818, Boston, Mass. November 1992.
- (4) **N.D. Sidiropoulos**, J.S. Baras, C.A. Berenstein, "Discrete Random Sets: an inverse problem, plus tools for the Statistical Inference of the Discrete Boolean Model", in *Proc. of Conference on Image Algebra and Morphological Image Processing III*, P.D. Gader, E.R. Dougherty, and J. Serra, Editors, SPIE vol. 1769, San Diego, California, July 19-24, 1992.
- (3) **N.D. Sidiropoulos**, J.S. Baras, C.A. Berenstein, "Optimal Mask Filtering of Discrete Random Sets under a Union/Intersection Noise Model", in *Proceedings of the 1992 Conference on Information Sciences and Systems*, Princeton University, Princeton, New Jersey, March 18-20, 1992.
- (2) **N.D. Sidiropoulos**, J.S. Baras, C.A. Berenstein, "Two-Dimensional Signal Deconvolution: design issues related to a novel multisensor-based approach", in *Proc. SPIE vol.*

1569, *Proceedings of Conference on Stochastic and Neural Methods in Signal Processing, Image Processing, and Computer Vision*, San Diego, California, July 24-26, 1991.

(1) **N.D. Sidiropoulos**, J.S. Baras, C.A. Berenstein, “Two-Dimensional Signal Deconvolution Using Multiple Sensors”, in *Proceedings of the 1991 Conference on Information Sciences and Systems*, The Johns Hopkins University, Baltimore, Maryland, March 20-22, 1991.

Patents

(6) **N.D. Sidiropoulos**, Y. Tang, “Interference-resilient Hybrid multi-antenna ARQ”, US patent application submitted by UVA LVG, Dec. 2024.

(5) M.-S. Ibrahim, **N.D. Sidiropoulos**, “Underlay scheme for short-range secondary communication”, US patent application submitted by UVA LVG, Dec. 2021.

(4) O. Mehanna, **N.D. Sidiropoulos**, “Channel Tracking and Transmit Beamforming with Frugal Feedback”, **US Patent 9,647,745 B2** issued May 9, 2017 (see also **US Patent 10,374,676**).

(3) E. Tsakonas, **N.D. Sidiropoulos**, A. Swami, “Method and Apparatus for Tracking a Frequency-Hopped Signal”, **US Patent 8,599,901 B2** issued Dec. 3, 2013.

(2) **N.D. Sidiropoulos**, and J.S. Baras, “Computer-Aided Determination of Window - and - Level Settings for Filmless Radiology”, **US Patent 6,127,669** issued Oct. 3, 2000.

(1) A. Biliris, H.V. Jagadish, T. Johnson, C. Faloutsos, **N.D. Sidiropoulos**, K. Yi, “Method and apparatus for analyzing co-evolving time sequences”, **US Patent 6,055,491** issued April 25, 2000.

Edited books

(1) **N.D. Sidiropoulos** and F. Gini (Section Eds.), S. Theodoridis, R. Chellapa (Series Eds.), *Academic Press Library in Signal Processing: Volume 2, Communications and Radar Signal Processing*, Academic Press, 2013.

(2) A. Gershman, **N.D. Sidiropoulos** (Eds.), *Space-Time Processing for MIMO Communications*, John Wiley & Sons, Apr. 2005.

Book chapters

(6) X. Liu, **N.D. Sidiropoulos**, and T. Jiang, “Multidimensional Harmonic Retrieval with Applications in MIMO Wireless Channel Sounding”, in *Space-Time Processing for MIMO Communications*, A. Gershman, N. Sidiropoulos, Eds., John Wiley & Sons, Apr. 2005.

(5) X. Liu, and **N.D. Sidiropoulos**, “PARAFAC Techniques for High Resolution Array Processing”, in *High Resolution Signal Processing*, Y. Hua, and A. Gershman, Eds., Marcel-Dekker, Dec. 2002.

(4) **N.D. Sidiropoulos**, and R. Bro, “PARAFAC Techniques for Signal Separation”, in *Signal Processing Advances in Communications*, P. Stoica, G. Giannakis, Y. Hua, and L. Tong, Eds., Prentice-Hall, Oct. 2000.

- (3) F. Korn, **N.D. Sidiropoulos**, C. Faloutsos, E. Siegel, Z. Protopapas, “Indexing Large Tumor-like Shape Databases”, in *Advances in Biomedical Image Databases*, Stephen Wong, Ed., Kluwer Academic Press, Boston, MA, 1998.
- (2) **N.D. Sidiropoulos**, “On Optimal Filtering of Morphologically Smooth Discrete Random Sets and Related Open Problems”, in *Random Sets: Theory and Applications*, J. Goutsias, R .P. S. Mahler, and H. T. Nguyen, Eds., IMA Volumes in Mathematics and its Applications, vol. 97, pp. 97-104, Springer 1997.
- (1) F. Korn, **N.D. Sidiropoulos**, C. Faloutsos, E. Siegel, and Z. Protopapas, “Efficient and Effective Nearest Neighbor Search in a Medical Image Database of Tumor Shapes”, in *Image Description and Retrieval*, Enrico Vicario (Ed.), Plenum Press, Italy, 1997.

WEBINARS

- N.D. Sidiropoulos** and C. Kanatsoulis, “Tensor Completion from Regular Sub-Nyquist Samples”, *IEEE Signal Processing Society Webinar Series*, Jan. 20, 2021.
- N.D. Sidiropoulos**, “Nonparametric Multivariate Density Estimation: A Low Rank Characteristic Function Approach”, *IEEE Greece Section / IEEE Signal Processing Society Greece Chapter* joint webinar, Dec. 4, 2020.
- N.D. Sidiropoulos**, “Nonparametric Multivariate Density Estimation: A Low Rank Characteristic Function Approach”, *One World Signal Processing Seminar*, Dec. 3, 2020.

PLENARY & KEYNOTE TALKS

- N.D. Sidiropoulos**, “Learning as tensor completion”, keynote talk at the First International Symposium on the Tsetlin Machine (ISTM), Grimstad, Norway, June 20, 2022.
- N.D. Sidiropoulos**, “Canonical Identification: A Principled Alternative to Neural Networks”, keynote talk at the *GdR ISIS Décompositions tensorielles Workshop*, May 27, 2020, Université de Lorraine. GdR ISIS is the Information, Signal, Image and ViSion division of the French Centre National de la Recherche Scientifique (CNRS).
- N.D. Sidiropoulos** “Canonical Identification: A Principled Alternative to Neural Networks”, keynote talk at the *53d Asilomar Conference on Signals, Systems, and Computers*, Nov. 1-4, 2019, Pacific Grove, California.
- N.D. Sidiropoulos** “Supervised Learning Via Tensor Completion”, keynote talk at the *IEEE Machine Learning for Signal Processing Workshop (MLSP)*, October 13-16, 2019, Pittsburg, PA.
- N.D. Sidiropoulos** “Machine learning for communications”, keynote speech at the *20th IEEE International Workshop on Signal Processing Advances in Wireless Communications (SPAWC)*, July 2-5, 2019, Cannes, France.
- N.D. Sidiropoulos** (joint work with N. Kargas, X. Fu) “Tensors and Probability: an Intriguing Union”, distinguished symposium talk at *GlobalSIP 2018: Tensor Methods for Signal Processing and Machine Learning Symposium*, Nov. 28, Anaheim, California, USA.
- N.D. Sidiropoulos** (joint work with N. Kargas) “Tensors and Probability: an Intriguing Union”, in *Seventh IEEE Int. Workshop on Computational Advances in Multi-sensor Adaptive Processing (CAMSAP 2017)*, Dec. 10-13, Curacao, Dutch Antilles.

N.D. Sidiropoulos (joint work with B. Yang and X. Fu) “Joint Dimensionality Reduction and Latent Clustering for Matrices and Tensors: A Factor Analysis Approach”, in *2016 Shenzhen Workshop on Data Science* (SZWDS 2016), March 19, 2016, CUHK/Shenzhen.

N.D. Sidiropoulos (joint work with B. Yang and X. Fu) “Joint Dimensionality Reduction and Latent Clustering for Matrices and Tensors: A Factor Analysis Approach”, in *Tensor Decomposition and Applications* (TDA) 2016 Workshop, Leuven, Belgium, Jan. 18-22, 2016.

N.D. Sidiropoulos, “Tensor Decomposition Theory and Algorithms in the Era of Big Data”, Inaugural plenary lecture at EUSIPCO, Sep. 2, 2014, Lisbon, Portugal.

N.D. Sidiropoulos, “Frugal Sensing and Estimation over Wireless Networks”, plenary lecture at ISWCS, Aug. 28, 2014, Barcelona, Spain.

N.D. Sidiropoulos, “Joint Back-pressure Power Control and Interference Cancellation for Wireless Multi-hop Networks”, IEEE GlobalSIP, Network Theory Workshop, Dec. 3, 2013, Austin, Texas.

N.D. Sidiropoulos, “Frugal Sensing: Spectral Analysis from Power Inequalities”, *IEEE SPAWC 2013 Workshop*, June 17, 2013, Darmstadt, Germany.

N.D. Sidiropoulos, “Cross-layer Wireless Networking: Complexity, Approximation, and Opportunities for SP Research”, *IEEE SPAWC 2010 Workshop*, June 20-23, Marrakech, Morocco.

N.D. Sidiropoulos, “Signal Processing Applications of Parallel Factor Analysis”, *Joint CNRS-SIAM Workshop on Tensor Decompositions and Applications*, Aug. 29 - Sep. 2, 2005, Luminy, Marseille, France.

N.D. Sidiropoulos, “Low-Rank Decomposition of Multi-Way Arrays: A Signal Processing Perspective”, *IEEE SAM 2004*, July 18-21, Sitges, Barcelona, Spain.

N.D. Sidiropoulos, “Links Between Multidimensional Low-Rank and Harmonic Decomposition”, *Numerical Multilinear Algebra and its Applications* mini-symposium at *SIAM 50th Anniversary and 2002 Annual Meeting*, Philadelphia, PA, July 8-12, 2002.

TALKS UNDER IEEE SPS DISTINGUISHED LECTURER PROGRAM

N.D. Sidiropoulos, “Multicast beamforming and admission control for UMTS-LTE and 802.16e”, Univ. of Belgrade, Serbia, July 2, 2008; Technical Univ. of Darmstadt, Germany, July 24, 2008; Northwestern University, Chicago, Nov. 7, 2008; Nokia Research Center, Helsinki, Finland, Nov. 12, 2008; University of Hong Kong, Apr. 28, 2009.

N.D. Sidiropoulos, “Analyzing Data ‘Boxes’: Multi-way linear algebra and its applications in signal processing and communications”, University Carlos III, Madrid, Spain, June 13, 2008; Institute Mihailo Pupin (IMP), Belgrade, Serbia, June 30, 2008; University of Minnesota, Minneapolis, Nov. 5, 2008; University of Illinois, Chicago, November 7, 2008; University of Helsinki, Finland, Nov. 11, 2008; Hong Kong University of Science and Technology, Apr. 27, 2009; University of Athens, Greece, Oct. 17, 2009 (part of Greek SP Jam).

COLLOQUIA

N.D. Sidiropoulos, “Canonical Correlation Analysis through the lens of linear and multilinear algebra”, NCSU CS Department Seminar, Oct. 11, 2024.

N.D. Sidiropoulos, “Tensors in Statistical Learning and Combinatorial Optimization”, Distinguished Mercer Lecture, ECE Department, Rensselaer Polytechnic Institute, March 22, 2023.

N.D. Sidiropoulos, “Tensors in Statistical Learning and Combinatorial Optimization”, EE Seminar, Harvard University, Feb. 3, 2023.

N.D. Sidiropoulos, “Blind Carbon Copy on Dirty Paper: Seamless Spectrum Underlay via Canonical Correlation Analysis”, Booz Allen Hamilton Colloquium, Department of ECE, University of Maryland at College Park, Friday, November 19, 2021

N.D. Sidiropoulos, “Canonical Identification: A Principled Alternative to Neural Networks”, Rice ECE Distinguished Speaker Series, June 18, 2020.

N.D. Sidiropoulos, “Tensors and Probability: an Intriguing Union”, Bradley Distinguished Lecture, Virginia Tech, Blacksburg, VA, Nov. 30, 2018.

N.D. Sidiropoulos, “Tensor Decomposition Theory and Algorithms in the Era of Big Data”, ECE Dept., Yale University, Oct. 9, 2015.

N.D. Sidiropoulos, “Tensor Decomposition Theory and Algorithms in the Era of Big Data”, ECE Dept., NCSU, Dec. 5, 2014.

N.D. Sidiropoulos, “Frugal sensing: Wideband Spectrm Sensing from few bits”, Arizona State University, Sensor Signal and Information Processing Industry Consortium, March 18, 2013.

N.D. Sidiropoulos, “Big Tensor Data, Compressed Sensing, and Preference Measurement”, University of Chicago, Departments of Computer Science, Mathematics, and Statistics, Scientific and Statistical Computing Seminar, February 28, 2013.

N.D. Sidiropoulos, “Parallel Factor Analysis”, invited colloquium at ETH, Zurich, Switzerland, Dec. 9, 2002. This talk was part of the prestigious *Communications, Information Theory, and Signal Processing* seminar at ETH.

N.D. Sidiropoulos, “Parallel Factor Analysis”, invited colloquium at FTW Research Center and the Technical University of Vienna (TUW), Vienna Austria, October 25, 2002.

N.D. Sidiropoulos, “Parallel Factor Analysis”, invited colloquium at University of Duisburg, Germany, June 24-27, 2002.

N.D. Sidiropoulos, “Code-Blind DS/FH Spread-Spectrum Multiuser Detection”, McMaster University, Hamilton, Ontario, Canada, Dept. of ECE Colloquium speaker, Aug. 31, 2001.

N.D. Sidiropoulos, “Code-Blind Spread-Spectrum Multiuser Detection”, University of Florida Gainesville, Dept. of ECE Colloquium speaker, March 27, 2001.

N.D. Sidiropoulos, “PARAFAC Analysis in Communications, Sensor Array Processing, and Networking”, University of Maryland Center for Satellite and Hybrid Communication Networks, Advanced Networks Colloquium Series, Feb. 11, 1999.

CONFERENCE TUTORIALS

(6) **N.D. Sidiropoulos** and P. Karakasis, “A Short Introduction to Canonical Correlation Analysis”, *IEEE International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP)* tutorial, Los Suenos, Costa Rica, Dec. 10-13, 2023.

- (5) **N.D. Sidiropoulos**, “Tensor Decomposition for Data Science”, *IEEE Data Science Workshop (DSW)* tutorial, June 2, 2019, Minneapolis, MN, USA.
- (4) **N.D. Sidiropoulos**, L. De Lathauwer, X. Fu, and E.E. Papalexakis, “Tensor Decomposition for Signal Processing and Machine Learning”, *IEEE ICASSP 2017* tutorial, March 5-9, 2017, New Orleans, USA.
- (3) **N.D. Sidiropoulos**, and E.E. Papalexakis, “Factoring Big Tensors in the Cloud: A Tutorial on Tensor Decomposition for Big Data Analytics”, *IEEE ICASSP 2014* tutorial, May 4-9, 2014 - Florence, Italy.
- (2) **N.D. Sidiropoulos**, “Linear Algebra for Three-way Arrays: A Signal Processing Perspective”, *IEEE ICASSP 2005* tutorial TUT-14, March 19, 2005, Philadelphia, PA, U.S.A.
- (1) **N.D. Sidiropoulos**, “Linear Algebra for Three-way Arrays: A Signal Processing Perspective”, *IEEE ISSPIT 2003* tutorial, Dec. 14, 2003, Darmstadt, Germany.

STUDENT ADVISING

Tao Li, Ph.D. (UVA) May 2000, “Blind Signal Separation Using Batch and Adaptive Multilinear Regression”. Member of Technical Staff, Philips Wireless, San Jose, CA, 2000-2006. Senior system architect, ApacWave, Fremont, CA (2007).

Xiangqian Liu, M.Sc. December 1999 (UVA), Ph.D. July 2002 (UMN), “Multidimensional Low Rank and Harmonic Analysis with Applications in Spread Spectrum Communications”. Assistant Professor, University of Louisville, KY (2002); Associate Professor, University of Louisville, KY (2008); Staff Scientist, Broadcom, Atlanta (2009).

Tao Jiang, Ph.D. August 2003 (UMN), “Low-Rank Decomposition of Multi-Way Arrays with Applications in Signal Processing and Wireless Communications”. Post-Doctoral Researcher in Prof. Ottersten’s group at KTH, Sweden, Aug. 2004 - Mar. 2005; Mathematical Analyst, Bear Stearns, London U.K. & Tokyo, Japan, Apr. 2005 - May 2008; June - October 2008, Analyst at JP Morgan, Tokyo; Nov. 2008 - Oct. 2013, Senior Analyst with the Royal Bank of Scotland, Hong Kong; Nov. 2013 -, Senior Analyst with Macquarie, Hong Kong.

Goran Dimic, M.Sc. April 2001 (UMN), Ph.D. May 2004 (UMN), “Capacity-Approaching Schemes for Multiple Access and Multiuser Downlink Transmission in Wireless Networks”. Senior Researcher and Group Leader, Institute Mihailo Pupin, Belgrade, Dec. 2005 -.

Rama Budampati, M.Sc. December 2001 (UMN), “Khatra-Rao Space-Time Codes”. Member of Technical Staff at Honeywell, Minnesota, 2003-.

Georgios Latsoudas, M.Sc. August 2006 (TUC), “Multidimensional Scaling Approach for Node Localization in Wireless Sensor Networks”. Member of Technical Staff, Wind Cellular, Athens-Greece.

Kleanthis Mokios, M.Sc. August 2006 (TUC), “Blind Speech Separation Using PARAFAC Analysis”. Kleanthis is a consultant / developer based in Thessaloniki, Greece.

Evaggelia Matskani, M.Sc. July 2007 (TUC), “Convex Approximation Techniques for Joint Multiuser Downlink Beamforming and Admission Control”.

Alexandros Valyrakis, M.Sc., Oct. 2007 (TUC), “Stochastic Modeling and Particle Filtering for Frequency Hopping”. Officer in the Greek Air Force Corps of Engineers.

Eleftherios Karipidis, Ph.D. Aug. 2008 (TUC), “Transmit Beamforming to Multiple Co-channel Multicast Groups”. Postdoctoral researcher, then Assistant Professor at Linköping University, Sweden (2008-2013). Senior researcher at Ericsson Research, Stockholm, Sweden, (June 2013-).

Dimitrios Evangelinakis, M.Sc. July 2010 (TUC), “Joint Admission and Power Control Using Branch & Bound and Gradual Admissions”. Member of technical staff at Nokia - Siemens R&D Center, Athens, Greece (Sep. 2010 -).

Ioannis Mitliagkas, M.Sc. July 2010 (TUC), “Joint Power and Admission Control for Ad-hoc and Cognitive Underlay Networks: Convex Approximation and Distributed Implementation”. Ioannis earned his Ph.D. at UT Austin, did a postdoc at Stanford, and is now Assistant Professor at University of Montreal, Canada.

Evangelos Papalexakis, M.Sc. July 2011 (TUC), “Co-clustering as multilinear decomposition with sparse latent factors”. Evangelos earned his Ph.D. in CS at CMU, and is now an assistant professor at UC Riverside.

Evaggelia Matakani, Ph.D. June 2012 (TUC), “Joint Resource Allocation and Routing in Wireless Networks via Convex Approximation Techniques”. Researcher at CERTH, Thessaloniki, Greece (Sep. 2012 -).

Omar Mehanna, Ph.D. May 2014 (UMN), “Frugal Sensing and Estimation over Wireless Networks”. Member of Technical Staff at Qualcomm, Santa Clara (May 2014 -).

Artem Mosesov, M.Sc. June 2014 (UMN), “Adaptive Non-negative Least Squares with Applications to Non-Negative Matrix Factorization”. Engineer at St. Jude Medical (June 2014 -).

Balasubramanian Gopalakrishnan, Ph.D. May 2015 (UMN), “High Performance Adaptive Transmit Beamforming for Wireless Networks using Binary CSIT”. Member of Technical Staff at Qualcomm, San Jose (May 2015 -).

John Tranter, M.Sc. June 2016 (UMN), “Fast Unit-modulus Least Squares with Applications in Beamforming”. Musician, faculty member in Music Department at UMN; and now also full-time Engineer at St. Jude Medical (Nov. 2016 -).

Kejun Huang, Ph.D. Aug. 2016 (UMN), “Constrained Matrix and Tensor Factorizations: Theory, Algorithms, and Applications”. Assistant Professor in the Computer Science Department, University of Florida, Gainesville. Won NSF CAREER award (2023).

Aritra Konar, Ph.D. Sep. 2017 (UMN), “Non-convex QCQP: Hidden Convexity, Scalable Approximation and Applications”. Post-doctoral researcher, then research scientist at UVA (10/2017–8/2022); then tenure-track Assistant Professor of ECE at KU Leuven, Belgium (8/2022–).

Bo Yang, Ph.D. June 2019 (UMN), “Unsupervised Learning of Latent Structure from Linear and Nonlinear Measurements”. Applied research scientist at Amazon / Alexa, Boston.

Ahmed Zamzam, Ph.D. June 2019 (UMN), “Optimization and Learning Methods for Electric Distribution Network Management”. Research Scientist at NREL, Denver, Colorado.

Charilaos Kanatsoulis, Ph.D. Oct. 2020 (UMN), “Tensor Methods for Signal Reconstruction and Network Embedding”. Postdoctoral Researcher, University of Pennsylvania.

Nikos Kargas, Ph.D. Dec. 2020 (UMN), “Tensor Modeling of High-dimensional Distributions and Nonlinear Functions”. Amazon Alexa, Cambridge, U.K.

Mohamed Salah Ibrahim, Ph.D. July 2021 (UVA), “Canonical Correlation Analysis for Next-generation Cellular and Cognitive Underlay Communication”. Interdigital, Philadelphia, PA.

Faisal Almutairi, Ph.D. July 2021 (UMN), “Latent Factorization for Hierarchical and Explainable Embeddings and Data Disaggregation”. Full Stack Data Scientist, Epsilon, Chicago.

Magda Amiridi, Ph.D. Dec. 2022 (UVA), “Tensor Modeling of High-dimensional Distributions and its Applications in Machine Learning”. Machine Learning Engineer at Apple, Cupertino, CA.

Past undergraduate students whose Diploma thesis was worth a graduate degree: Thimios Tsakonas, currently chief data scientist with Elsevier, Amsterdam (after completing his Ph.D. at KTH, Sweden); Vassilis Ntranos, currently Assistant Professor, Diabetes Center, School of Medicine, UCSF.

Current Ph.D. students: Paris Karakasis, Spyros Peppas, Qiheng Lu, Kieran Lynch.

POST – DOCS

Yuanyuan Tang (1/2024–9/2024), University of Virginia. R&D Engineer at Broadcom, Denver, CO.

Aritra Konar (10/2017–8/2022), University of Virginia. Tenure-track assistant professor at KU Leuven, Belgium.

Mikael Sorensen (05/2018–10/2022), University of Virginia. University of Copenhagen, Denmark.

Cheng Qian (08/2017–08/2019), Associate Director at IQVIA.

Kejun Huang (9/2016-8/2018), Assistant Professor in the Computer Science Department, University of Florida, Gainesville. Won NSF CAREER award (2023).

Xiao Fu (Oct. 2014 - Aug. 2017), Associate Professor in the Electrical Engineering and Computer Science Department at Oregon State University. Won NSF CAREER Award (2022).

Niranjay Ravindran (Sep. 2013 - Feb. 2014), Senior Development Engineer at HGST, a Western Digital company, Rochester, Minnesota.

Dimitri Nion (2007-2008), Systems Engineer at Bombardier Transportation, France.

Past visitors: Xiao Fu (CUHK); Cheng Qian (HIT-China); Tianyu Qiu (HKUST-HK); Yunmei Shi (HIT-China); Timos Tsakonas (KTH-Sweden); Panos Alevizos (TUC-Greece).

FUNDING

“Content - based compression and search of medical multimedia databases”, PI: N. D. Sidiropoulos, NASA/CSHCN contract number Z64101. Period: September, 1997 - December, 1997. Amount: \$49,601.

“Bilinear Shape-Constrained Regression in Blind Source Separation / Equalization, and Signal Processing for Chromatographic Analysis”, PI: N.D. Sidiropoulos. NSF CAREER, Signal Processing Systems Program. Period: June, 1998 - May, 2002. Amount: \$200,000.

“PARAFAC Space-Time Processing for Circular Ring Arrays”, Co-PI’s: N. Sidiropoulos and G. Giannakis. ONR Space-Time Adaptive Processing Methods for Circular Ring Arrays with Application to Navy Airborne Surveillance Radar. Award period: May 1999 - December 1999. Amount: \$60,000 (\$30,000 for each PI).

“From Medium Access to Physical Layer: An Integrated DSP Framework for Wireless Packet Networks”, PI: N.D. Sidiropoulos, Co-PI’s: M. Tsatsanis (SIT), L. Tassiulas (UMCP). NSF Wireless IT & Networks Initiative NSF 99-68. Award period: Sept. 1999 - Aug. 2002. Funding level: \$450K total for 3 years (Sidiropoulos total: \$177K for 3 years).

“Code-Blind Receivers for FH Spread Spectrum Systems”, PI: N.D. Sidiropoulos, with General Dynamics Information Systems. DARPA / ATO contract MDA 972-01-0056. Award period: Aug. 2001 - May 2005. Funding level: \$2 Million for 4 years (Sidiropoulos total: \$400K).

“Blind FH Source Separation”, and “Multicode Multicarrier Random Access”, PI: N.D. Sidiropoulos. ARL (part of ARL CTA 2001 consortium). Award period: 6 years. First year funding for Sidiropoulos: \$120K; second year funding for Sidiropoulos: \$160K; third year funding for Sidiropoulos (as visiting professor at UMN): \$40K

Supplementary funding for “From Medium Access to Physical Layer: An Integrated DSP Framework for Wireless Packet Networks”, PI: N.D. Sidiropoulos, Co-PI: L. Tassiulas (UMCP). NSF Wireless IT & Networks Initiative. Award period: Sept. 2001 - Aug. 2003. \$90K total for 2 years (Sidiropoulos total: \$45K).

“Multiuser Transmit Beamforming for Maximum Sum Capacity in Tactical Wireless Multicast Networks”, ARO-ERO (European Research Office), PI: N.D. Sidiropoulos. Award Period: Summer 2003 - Summer 2006. Funding level: \$103K.

“U-BROAD: Ultra High Bit Rate over Copper Technologies for BROADband Multiservice Access”, European Commission, FP6 IST STREP project. Consortium led by Metalink, Inc. Israel; partners were Bar-Ilan University, Israel; Telecom Systems Institute, Tech. Univ. of Crete (PI: N. Sidiropoulos); Rad Data Com., France Telecom, TU Delft, Netherlands, and the Greek National Telecom Organization. Award Period: Dec. 2003 - Dec. 2005. Total budget was 2M Euro for 2 years; Sidiropoulos’ share was 170K Euro.

“Multiuser Downlink Beamforming and Scheduling for Broadband Wireless Access Beyond 3G”, Greek Secretariat for Research and Technology, Division of International Collaboration in Research and Technology. PI: Nikos Sidiropoulos; Co-PIs: Georgios Giannakis (UMN-U.S.A.) and Michael Paterakis (TSI-TUC, GR). Budget: 60K Euro for 2 years.

“Transmit Beamforming for Wireless Networks”, Greek Secretariat for Research and Technology / HERAKLEITOS program. PI: Nikos Sidiropoulos. Budget: 32K Euro for 2 years.

“Joint Transceiver Optimization and Scheduling / Admission Control in Wireless Networks: Forging Synergies between Semidefinite Relaxation and Branch & Bound Strategies”, ARL-ERO (European Research Office), PI: N.D. Sidiropoulos. Award Period: Sep. 2006 - Mar. 2008. Funding level: \$40K.

“COOPCOM: Cooperative and Opportunistic Communications in Wireless Networks”, European Commission, FP6 FET STREP project. Award Period: Oct. 2006 - Sep. 2009. PI: A. Liavas; N. Sidiropoulos was co-PI.

“Joint Transceiver Optimization and Scheduling-Admission / Flow Control in Wireless Networks”, ARL-ERO (European Research Office), PI: N.D. Sidiropoulos. Award Period: Nov. 2008 - Nov. 2010. Funding level: \$70K.

Contributing researcher in FP6/7 projects NEWCOM, WIP, N-CRAVE, OPNEX (PI: Leandros Tassiulas).

“Factor Analysis of Social Networks”, ARL-ERO (European Research Office), PI: N.D. Sidiropoulos. Award Period: Oct. 2010 - Oct. 2012. Funding level: \$70K.

“HERAKLEITOS-II: Joint Routing and Resource Allocation in Wireless Networks using Convex Approximation Techniques” (Doctoral fellowship for Ph.D. Candidate Evaggelia Matskani), co-financed by the EC and Greek National funds. PI: N.D. Sidiropoulos. Award period: 2010-2012. Funding level: 45K Euro.

“THALES: Social Network-aware Cognitive Radio Networks”, co-financed by the EC and Greek National funds, 2012-2014, PI: L. Georgiades, co-PIs: N.D. Sidiropoulos, L. Tassiulas. Award period: 2012-2014. Funding level: 600K Euro.

“NOPTILUS: Autonomous Self-learning Complete Underwater Systems”, European Commission, FP7 integrated project (IP) under ICT-6-2.1 - Cognitive Systems and Robotics. Award Period: Jan. 2011 - Jan. 2015. Consortium led by CERN; partners are U. Porto, ETH Zurich, TU Delft, Imperial, Oceanscan, and the Portuguese Port Authority. Total consortium funding: 3.7M Euro. TUC share: 500K Euro. TUC PI: N.D. Sidiropoulos.

“Tensor Completion and Preference Measurement for Distilling Recommendations from Big Data”, Digital Technology Center, University of Minnesota, Digital Technology Initiatives (DTI) grant. PI: N.D. Sidiropoulos, co-PI: G. Adomavicius. Award Period: 7/2012 - 8/2013. Funding level: \$80K. (Sidiropoulos’ part: \$47K).

“Sparse Latent Factor Models for Social Network Analysis and Tensor Completion”, ARO/STIR, PI: N.D. Sidiropoulos. Award Period: 9/15/2011 - 6/15/2012. Funding level: \$44K

“Wideband cognitive sensing from a few bits”, NSF ECCS-1231504, PI: N.D. Sidiropoulos. Award Period: 10/1/2012 - 09/30/2015 (NCE till 09/30/2016), Funding level: \$360K.

“Spectral Tweets: A Community Paradigm for Spatio-temporal Cognitive Sensing and Access”, NSF AST-1247885, PI: N.D. Sidiropoulos, co-PIs: G.B. Giannakis, and J.D. Haupt. Award Period: 09/1/2012 - 08/31/2015 (NCE till 08/31/2016), Funding level: \$500K (Sidiropoulos’ part: \$167K).

“BIGDATA: Mid-Scale: DA: Collaborative Research: Big Tensor Mining: Theory, Scalable Algorithms and Applications”, NSF IIS-1247632, PI: N.D. Sidiropoulos, co-PI: G. Karypis. Award Period: 12/1/2012 - 11/30/2016, Funding level: \$867K (Sidiropoulos’ part: \$433.5K). This is a collaborative project with CMU (PI: C. Faloutsos, co-PI: T. Mitchell, NSF IIS-1247489).

“Workshop on Big Data: From Signal Processing to Systems Engineering”, NSF ECCS-1327148, PI: N.D. Sidiropoulos. Award Period: 2/23/2013 - 1/31/2014. Held at Arlington, Virginia, March 21-22, 2013. Funding level: \$50K.

“Student Stipend Program for IEEE SPAWC 2013”, ONR N00014-13-1-0277, PI: N.D. Sidiropoulos. Award Period: 01/01/2013 - 12/31/2013. Funding level: \$10K.

“Supplement for BIGDATA: Mid-Scale: DA: Collaborative Research: Big Tensor Mining: Theory, Scalable Algorithms and Applications”, supplementary funding from NIH (as a subcontract through CMU), PI: N.D. Sidiropoulos, co-PI: G. Karypis. Award Period: 9/1/2013 - 8/31/2014, Funding level: \$50K (Sidiropoulos’ part: \$25K).

“Methods for Learning Analytics”, Digital Technology Center, University of Minnesota, Digital Technology Initiatives (DTI) grant. PI: G. Karypis, co-PI: N.D. Sidiropoulos. Award Period: 9/2014 - 8/2015. Funding level: \$80K. (Sidiropoulos’ part: \approx \$40K).

“BIGDATA: IA: DKA: Collaborative Research: Learning Data Analytics: Providing Actionable Insights to Increase College Student Success”, NSF IIS-1447788, PI: G. Karypis, co-PI: N.D. Sidiropoulos. Award period: 09/01/2014 - 08/31/2018. Funding level: \$1,219,736 (Sidiropoulos’ part \approx \$550,000).

“Factor Analysis for Spectral Reconnaissance and Situational Understanding”, ARO STIR, PI: N.D. Sidiropoulos. Award period: 08/01/2015 - 04/30/2016. Funding level: \$49,916.

“CIF: Small: Feasible Point Pursuit for Non-convex QCQPs: Algorithms and Signal Processing Applications”, NSF CCF-1525194, PI: N.D. Sidiropoulos. Award period: 09/01/2015 - 08/31/2018. Funding level: \$449,468 (includes \$85,626 SUNY-Buffalo sub-award to K. Slavakis).

“Robust and Scalable Volume Minimization-based Matrix Factorization for Sensing and Clustering”, NSF ECCS-1608961, PI: N.D. Sidiropoulos; Co-PI: X. Fu. Award period: 07/01/2016 - 06/30/2019. Funding level: \$359,935.

“Anchor-Free Correlated Topic Modeling: Identifiable Formulations and Scalable Algorithms”, Digital Technology Center, University of Minnesota, Digital Technology Initiatives (DTI) grant. PI: N.D. Sidiropoulos; Co-PI: X. Fu. Award period: 07/01/2016 - 06/30/2017. Funding level: \$60,000.

Huawei Technologies Co. Ltd., Shanghai China and Santa Clara, CA: \$100,000 research gift to support Sidiropoulos’ group research in 5G wireless networks and related areas (Nov. 7, 2016).

“III: Medium: High-Performance Factorization Tools for Constrained and Hidden Tensor Models”, NSF IIS-1704074, PI: G. Karypis, co-PI: N.D. Sidiropoulos. Award period: 09/01/2017 - 08/31/2021. Funding level: \$1,200,000 (Sidiropoulos’ part \approx \$600,000).

“Identifying Potential Investors using Joint Factorization and Latent Clustering”, Corning, PI: N.D. Sidiropoulos; Co-PI: K. Huang. Award period: 09/01/2017 - 08/31/2018. Funding level: \$70,000.

“Collaborative Research: Multimodal Sensing and Analytics at Scale: Algorithms and Applications”, NSF ECCS-1807660, PI: N.D. Sidiropoulos (collaborative project with X. Fu, Oregon State University). Award period: 09/01/2018 - 08/31/2021. Funding level for Sidiropoulos: \$200,000.

“Machine Learning Approaches for Target Spectrum Detection in Hyperspectral Images”, MTEQ, PI: N.D. Sidiropoulos. Award period: 12/01/2018 - 11/30/2019. Funding level: \$100,000.

“Geometric Factorization Tools for Community Mining”, ARO, PI: N.D. Sidiropoulos. Award period: 08/01/2019 - 07/31/2022. Funding level: \$550,000 (includes subcontracts to Xiao Fu, Oregon State University; and Zack Almquist, Univ. of Washington).

“III: Small: A Submodular Framework for Scalable Graph Matching with Performance Guarantees”, NSF IIS-1908070, PI: N.D. Sidiropoulos; co-PI: Aritra Konar. Award period: 10/01/2019 – 9/30/2023. Funding level: \$456,742.00.

“SII Planning: WHISPERS: Wireless Hardware Innovations and Signal Processing for Enhanced Radio-astronomy and Scientific Spectrum Sharing”, NSF AST-2037838, PI: Robert Weikle; co-PIs N. Sidiropoulos, Randall Berry, Anthony Beasley, Gerhard Schoenthal, Award period: 8/15/2020 - 8/14/2021. Funding level: \$299,720.00.

“Blind Carbon Copy on Dirty Paper: Seamless Spectrum Underlay made Practical”, NSF ECCS-2118002, PI: N. Sidiropoulos, Award period: 7/1/2021 - 6/30/2025. Funding level: \$388,000.

Unrestricted research gift from Leidos, Inc., Feb. 2024. PI: N. Sidiropoulos. Funding level: \$80,000.

“How to slip your message under strong interference: Signal alignment use case demonstrations”, Virginia CCI commercialization and Innovation, 2024. PI: N. Sidiropoulos, Award period: 6/1/2024 - 9/30/2024. Funding level: \$27,500.

“Agile Signal Alignment for Congested and Contested Spectrum Access”, NSF ECCS-2433870, PI: N. Sidiropoulos, Award period: 1/1/2025 - 12/31/2027. Funding level: \$399,947.

“SII-Center: SpectrumX The National Center for Spectrum Innovation”, NSF AST-2132700. This is a multi-university NSF Center, led by Notre Dame (J. Nicholas Laneman) with UVA as a partner (UVA co-PI: Robert Weikle). N. Sidiropoulos is senior personnel on this effort.

Unrestricted research gift from Leidos, Inc., Oct. 2024. PI: N. Sidiropoulos. Funding level: \$80,000.

“SDR demonstration of jam-resilient Hybrid ARQ”, Virginia CCI commercialization and Innovation, 2025. PI: N. Sidiropoulos, Award period: 6/1/2025 - 12/31/2025. Funding level: \$25,000.

ARL STTR A24B-T013 - Communication under interference with a broad dynamic range. Phase I subaward (prime: Nexcepta, Inc.) Dec. 2024-June 2025, \$82,500 (UVA subaward).

“Signal Alignment Strategies for Resilient and Unobtrusive Communications and Radar”, ARO contract # W911NF2520149. PI: N. Sidiropoulos, Award period 07/01/2025 - 06/30/2028. Funding level: \$525,000.

TEACHING EXPERIENCE

(1) ENEE 425, *Digital Signal Processing*, Spring 1995, Dept. of Electrical Engineering, University of Maryland, College Park. Student evaluation grade average: 3.49/4.0. Dept. average not available for Spring 1995; Fall 1995 Dept. average is 3.32/4.0.

(2) ENEE 420, *Communication Systems*, Fall 1995, Dept. of Electrical Engineering, University of Maryland, College Park. Student evaluation grade average: 3.81/4.0. Fall 1995 Dept. average is 3.32/4.0.

- (3) ENEE 724, *Statistical Signal Processing*, Spring 1996, Dept. of Electrical Engineering, University of Maryland, College Park (advanced graduate level). Student evaluation grade average: 3.84/4.0. Spring 1996 Dept. average is 3.33/4.0.
- (4) *A Short Course on DSP*, Fall 1996, Army Research Laboratory, Ft. Monmouth, NJ.
- (5) ENEE 425, *Digital Signal Processing*, Spring 1997, Dept. of Electrical Engineering, University of Maryland, College Park. Student evaluation grade average: 3.56/4.0. Spring 1997 undergraduate Dept. average is 3.37/4.0.
- (6) EE 611, *Probability and Stochastic Processes*, Fall 1997, Dept. of Electrical Engineering, University of Virginia. Student evaluation: two standard deviation units above mean for all 600-level courses after 1984. Instructor rating: 4.649, mean for all 600-level courses: 4.313.
- (7) EE 774, *Advanced Digital Signal Processing* (emphasizing spectral analysis), Spring 1998, Dept. of Electrical Engineering, University of Virginia. Student evaluation: three standard deviation units above mean for all 700-level courses after 1984. Instructor rating: 4.671, mean for all 700-level courses: 4.246.
- (8) EE 323, *Signals and Systems I*, Fall 1998, Dept. of Electrical Engineering, University of Virginia. Student evaluation: one standard deviation unit below mean for all 300-level courses after 1984. Instructor rating: 3.621, mean for all 300-level courses: 3.830
- (9) EE 324, *Signals and Systems II*, Spring 1999, Dept. of Electrical Engineering, University of Virginia. Student evaluation: two standard deviation units above mean for all 300-level courses after 1984. Instructor rating: 4.223, mean for all 300-level courses: 3.844.
- (10) EE 323, *Signals and Systems I*, Fall 1999, Dept. of Electrical Engineering, University of Virginia.
- (11) Recitations for EE 3025, *Probability and Stochastic Processes*, Spring 2000, Dept. of Electrical and Computer Engineering, University of Minnesota.
- (12) EE5381, *Telecommunication Networks*, Fall 2000, Dept. of Electrical and Computer Engineering, University of Minnesota, Minneapolis. Instructor rating: 6.3, mean for all 5000-level courses: 5.83.
- (13) EE 3025, *Probability and Stochastic Processes*, Spring 2001, Dept. of Electrical and Computer Engineering, University of Minnesota. Instructor rating: 5.0, mean for all 3000-level courses: 5.0.
- (14) EE5381, *Telecommunication Networks*, Fall 2001, Dept. of Electrical and Computer Engineering, University of Minnesota, Minneapolis.
- (15) TEL 601, *Probability and Stochastic Processes*, Spring 2002, 2003, 2005 (**3 times**), Dept. of ECE, Technical University of Crete.
- (16) TEL 201, *Signals and Systems*, Fall 2002, 2003 (**2 times**), Dept. of ECE, Technical University of Crete.
- (17) TEL 302, *Digital Communications*, Spring 2003, 2004 (**2 times**), Dept. of ECE, Technical University of Crete.
- (18) TEL 609, *Convex Optimization*, Spring 2004, 2008, 2009, 2010, 2011 (**5 times**) Dept. of ECE, Technical University of Crete.

- (19) TEL 301, Telecommunication Systems I, Fall 2004-2009 (**6 times**), Dept. of ECE, Technical University of Crete.
- (20) TEL 502/415, Statistical Signal Processing for Communications, Spring 2005, 2008, 2009, 2010, 2011 (**5 times**) Dept. of ECE, Technical University of Crete.
- (21) TEL 603, Estimation and Detection, Spring 2007, Dept. of ECE, Technical University of Crete.
- (22) EE 3025, Statistical Methods in Electrical and Computer Engineering, Spring 2012, Dept. of Electrical and Computer Engineering, University of Minnesota. Instructor rating: median responses were 6.0 in all six instructor-related questions. Dept. mean of medians ranged from 5.0 to 5.8 for 3000-level courses.
- (23) EE 5501, Digital Communications, Fall 2012, Dept. of Electrical and Computer Engineering, University of Minnesota. Instructor rating: median responses were 5.0 in 4/6 and 6.0 in 2/6 instructor-related questions. Average of means = 5.435/6.0. Dept. mean of medians ranged from 5.2 to 5.9 for 5000-level courses.
- (24) EE 3025, Statistical Methods in Electrical and Computer Engineering, Spring 2013, Dept. of Electrical and Computer Engineering, University of Minnesota. Instructor rating: median responses were 5.0 in 3/6 and 6.0 in 3/6 6.0 instructor-related questions. Average of means = 5.241/6.0.
- (25) EE 5501, Digital Communications, Fall 2013, Dept. of Electrical and Computer Engineering, University of Minnesota. Instructor rating: median responses were 5.0 in 3/6 5.5 in 1/6 and 6.0 in 2/6 instructor-related questions. Average of means = 5.48/6.0. Dept. mean of medians ranged from 5.1 to 5.9 for 5000-level courses.
- (26) CSE 1001, First Year Experience, Fall 2013, College of Science and Engineering, University of Minnesota. Instructor rating: median responses were 5.0 in 1/6 and 6.0 in 5/6 instructor-related questions. Average of means = 5.42/6.0.
- (27) EE 3025, Statistical Methods in Electrical and Computer Engineering, Spring 2014, Dept. of Electrical and Computer Engineering, University of Minnesota. Instructor rating: median responses were 5.0 in 3/6 and 6.0 in 3/6 instructor-related questions. Average of means = 5.35/6.0.
- (28) EE 5501, Digital Communications, Fall 2014, Dept. of Electrical and Computer Engineering, University of Minnesota. Instructor rating: median responses were 6.0 in all 6 instructor-related questions. Average of means = 5.89/6.0.
- (29) CSE 1001, First Year Experience, Fall 2014, College of Science and Engineering, University of Minnesota. Instructor rating: median responses were 5.0 in 3/6 and 6.0 in 3/6 instructor-related questions. Average of means = 5.07/6.0.
- (30) EE 3025, Statistical Methods in Electrical and Computer Engineering, Spring 2015, Dept. of Electrical and Computer Engineering, University of Minnesota. Instructor rating: median responses were 5.0 in 2/5 and 6.0 in 3/5 instructor-related questions. Average of means = 5.59/6.0.
- (31) EE 5501, Digital Communications, Fall 2015, Dept. of Electrical and Computer Engineering, University of Minnesota. Instructor rating: 5.46/6.0.

- (32) EE 8520, Tensor Decomposition for Signal Processing and Machine Learning, Spring 2016, Dept. of Electrical and Computer Engineering, University of Minnesota. Instructor rating: 5.77/6.0.
- (33) EE 3025, Statistical Methods in Electrical and Computer Engineering, Fall 2016, Dept. of Electrical and Computer Engineering, University of Minnesota. Instructor rating: 5.42/6.0.
- (34) EE 8581 Detection and Estimation Theory, Spring 2017, Dept. of Electrical and Computer Engineering, University of Minnesota. Instructor rating: 5.42/6.0.
- (35) ECE 6502 / CS 6501, Tensors for Data Science and Machine Learning, Spring 2019, Dept. of Electrical and Computer Engineering, University of Virginia. Instructor rating: 4.60/5.0. School average for 6000-level courses: 4.25/5.0.
- (36) APMA 3100, Probability, Fall 2020, Applied Mathematics (APMA) Program, University of Virginia. Instructor rating: 3.77/5.0. APMA average: 3.81/5.0.
- (37) ECE 6502, Tensors for Data Science and Machine Learning, Spring 2022, Dept. of Electrical and Computer Engineering, University of Virginia. Instructor rating: 4.44/5.0. School average for 6000-level courses: 4.16/5.0.
- (38) ECE 6711, Probability and Stochastic Processes, Fall 2021, Spring 2023, Fall 2023, Fall 2024, Dept. of Electrical and Computer Engineering, University of Virginia.
- (39) ECE 2700, Signals and Systems, Spring 2024, Spring 2025, Dept. of Electrical and Computer Engineering, University of Virginia.
- (40) ECE 4710 / 7712 Communications / Digital Communications (introduced hands-on software radio programming), Fall 2025, Dept. of Electrical and Computer Engineering, University of Virginia.

PROFESSIONAL SOCIETIES AND SERVICE

Memberships: *Fellow* IEEE; *Fellow*, EURASIP; Member, Technical Chamber of Greece.

Leadership: *Vice President of the IEEE Signal Processing Society*, responsible for Membership services (2017-2019). SPS is one of the largest IEEE Societies, with $\approx 17,000$ members. VP Membership is responsible for education and continuing education, industry outreach, local chapters throughout the world, seasonal schools, membership development, young professionals, membership benefits and the overall membership experience. VP Membership is a member of the Society's Board of Governors and its Executive Committee.

Stewardship: Chair of the IEEE Signal Processing Society Fellow Evaluation Committee, 2020 and 2021. Responsible for coordinating the review and evaluation of about 60 IEEE Fellow nominations.

Associate Editor: IEEE Signal Processing Letters (2000 - 2002); IEEE Trans. Signal Processing (2000 - 2006 & 2012-); IEEE Signal Processing Magazine Editorial Board (2009 -); Elsevier Signal Processing (2009 - 2013). Guest Editor for Special Issue on Convex Optimization in Signal Processing, IEEE Signal Processing Magazine, May 2010.

Area Editor: IEEE Trans. Signal Processing (Jan. 2012 - Dec. 2014).

Chair: Signal Processing for Communications Technical Committee (SPCOM-TC), IEEE Signal Processing Society, 2007 - 2008 (vice-chair, 2005 - 2006).

Technical Committee Memberships: Signal Processing for Communications Technical Committee (SPCOM-TC), IEEE Signal Processing Society (2000 - 2008). Sensor Array and Multichannel processing Technical Committee (SAM-TC), IEEE Signal Processing Society (2004 - 2009). Machine Learning for Signal Processing Technical Committee (MLSP-TC), IEEE Signal Processing Society (2015 - 2018). Big Data Special Interest Group (Big Data SiG), IEEE Signal Processing Society (2014 - 2018).

Technical Program Committee (TPC) Chair: IEEE CAMSAP 2005, Dec. 13-15, 2005, Puerto Vallarta, Mexico.

General co – Chair (with R. Rao, RIT): IEEE CAMSAP 2007, St. Thomas, U.S. Virgin Islands, Dec. 12-14, 2007.

Technical Program Committee (TPC) co – Chair (with B. Sadler, ARL):
IEEE SAM 2008, July 21-23, Darmstadt, Germany.

Organizing Committee (Tutorial co – chair & Student paper awards chair):
ICASSP 2011, Prague, May 22-27, 2011.

Special sessions chair:
DSP 2011, July 6-8, 2011, Corfu - Greece.

Special sessions co – chair:
SPAWC 2013, June 16-19, 2013, Darmstadt, Germany.

Chair:
NSF/ECCS Workshop on Big Data: From Signal Processing to Systems Engineering, Arlington, VA, March 21-22, 2013.

Organizing Committee (Student paper awards chair):
ICASSP 2015, Brisbane, Queensland, Australia, April 19-24, 2015.

Organizing Committee (Student paper awards chair):
Asilomar Conference on Signals, Systems, and Computers, Nov. 8-11, 2015, Pacific Grove, CA.

Organizing Committee (Plenary co – chair):
ICASSP 2023, June 4-9, 2023, Rhodes, Greece.

General Chair: TRICAP 2006 (cross-disciplinary three-way analysis workshop), Chania, Crete, Greece, June 2006.

Steering Committee Member and Co – Organizer: TRICAP 2003 (cross-disciplinary three-way analysis workshop), June 22-27, Lexington, KY; TRICAP 2009, Vall de Nuria - Spain, June 14-19, 2009.

Reviewer: Regular reviewer for NSF, ARO, IEEE Trans. on: Signal Processing, Information Theory, Communications, Wireless Communications; IEEE Signal Processing Letters, and IEEE Communications Letters.

Technical Program Committee Member: IEEE ICASSP 2000 - 2023; IEEE SPAWC 2003-2012; IEEE SAM 2002, 2004, 2006, 2010, 2012; IEEE ICIP98, Chicago; IEEE ICIP99, Kobe, Japan.

Panel Member: NSF KDI/LIS, NSF SPS/CAREER, NSF/ITR, NSF/COM, NSF/ECCS, Belgian Science Foundation, German Science Foundation, Israeli Science Foundation.

SERVICE TO THE DEPARTMENT

At UVA: Member, Undergraduate, Computing Resources Committees, 1997-98. Member, Long Range Planning, Graduate, Computing Resources, Eminent Speakers Committees, 1998-99. *At UMN:* ECE Colloquium Coordinator, 2000-2001. ECE Communications Seminar Coordinator, 2001-2002. *At TUC:* Vice-Chair, Dept. of ECE, 2003-2005; Chair, Dept. of ECE, 2005-2007; Director, Telecommunications Laboratory, 2003-2011. Member of the Board, Telecommunication Systems Institute, 2003-2011. *At UMN:* WPE committee member (F'11-S'12, F'14-S'15, F'16-S'17). DDF Committee member (S'12, S'13, S'14, S'15). ECE Representative on CSE ad-hoc committee for Data Science M.Sc. program (May-August 2013). Undergraduate advising committee member (F'12, S'13, F'13, S'14). Faculty recruiting committee member (F'13-S'14). Chair of Promotion, Tenure and Awards Committee (F'14-S'15, F'15-S'16); member of Promotion, Tenure and Awards Committee (F'16-S'17).

IEEE – STYLE BIOGRAPHICAL SKETCH

Nicholas Sidiropoulos (*Fellow, IEEE*) received the Diploma in electrical engineering from the Aristotle University of Thessaloniki, Greece, and the M.S. and Ph.D. degrees in electrical engineering from the University of Maryland at College Park, College Park, MD, USA, in 1988, 1990, and 1992, respectively. He is the Louis T. Rader Professor at the University of Virginia. He has previously served on the faculty of the University of Minnesota, and the Technical University of Crete, Greece. His research interests are in signal processing, communications, optimization, and tensor decomposition with applications in machine learning and communications. He received the NSF/CAREER award in 1998, the IEEE Signal Processing Society (SPS) Best Paper Award in 2001, 2007, 2011, and 2023, and the IEEE SPS Donald G. Fink Overview Paper Award in 2023. He served as IEEE SPS Distinguished Lecturer (2008–2009), as Vice President - Membership of IEEE SPS (2017–2019), and as chair of the SPS IEEE Fellow Evaluation Committee (2020–2021). He received the IEEE Signal Processing Society Meritorious Service Award (2010), the Distinguished Alumni Award of the Department of ECE, University of Maryland (2013), the EURASIP Technical Achievement Award (2022), the IEEE SPS Claude Shannon - Harry Nyquist Technical Achievement Award (2022), and the University of Virginia Research Achievement Award (2023). He is a Fellow of EURASIP (2014).