

Asst. Prof. BARIŞ NAKİBOĞLU

Personal Information

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International Researcher IDs

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Publons / Web Of Science ResearcherID: A-2334-2019

ScopusID: 23492777100

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Education Information

Doctorate, Massachusetts Institute of Technology, Dept. of Electrical Engineering and Computer Science, United States Of America 2005 - 2011

Postgraduate, Massachusetts Institute of Technology, Dept. of Electrical Engineering and Computer Science, United States Of America 2003 - 2005

Undergraduate, Middle East Technical University, Faculty of Engineering, Department of Electrical and Electronics Engineering, Turkey 1998 - 2002

Undergraduate Double Major, Middle East Technical University, Faculty of Arts and Sciences, Department of Physics, Turkey 1998 - 2002

Dissertations

Doctorate, Exponential Bounds On Error Probability With Feedback, Massachusetts Institute of Technology, Dept. of Electrical Engineering and Computer Science, 2011

Postgraduate, Variable Block Length Coding for Channels with Feedback and Cost Constraints, Massachusetts Institute of Technology, Dept. of Electrical Engineering and Computer Science, 2005

Research Areas

Information Theory, Probability Theory, Stochastic Processes

Academic Titles / Tasks

Assistant Professor, Middle East Technical University, Faculty of Engineering, Department of Electrical and Electronics Engineering, 2018 - Continues

Expert PhD, University of California, Berkeley, College of Engineering, Department of Electrical Engineering and Computer Sciences , 2012 - 2013

Courses

Information Theory, Postgraduate, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019
Circuit Theory 1, Undergraduate, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020
Signals and Systems I, Undergraduate, 2023 - 2024
Probability and Random Variables, Undergraduate, 2022 - 2023, 2021 - 2022, 2019 - 2020
Probability and Stochastic Processes, Postgraduate, 2022 - 2023, 2021 - 2022
Circuit Theory 2, Undergraduate, 2020 - 2021

Advising Theses

Nakiboğlu B., THE CAUCHY-SCHWARZ DIVERGENCE AND ENTROPY-BASED DENSITY-WEIGHTED ACTIVE LEARNING, Postgraduate, M.ENES(Student), 2022
Nakiboğlu B., A DECOMPOSITION FOR THE TILTED CHANNEL OF THE FAST FADING CHANNELS, Postgraduate, M.FURKAN(Student), 2022

Jury Memberships

Doctorate, Doctorate, Ihsan Dogramaci Bilkent University, June, 2022
Doctorate, Doctorate, Ihsan Dogramaci Bilkent University, June, 2022
PhD Thesis Monitoring Committee Member, PhD Thesis Monitoring Committee Member, İhsan Dođramacı Bilkent Üniversitesi, December, 2021
Doctorate, Doctorate, Ihsan Dogramaci Bilkent University, August, 2021
PhD Thesis Monitoring Committee Member, PhD Thesis Monitoring Committee Member, İhsan Dođramacı Bilkent Üniversitesi, June, 2021
PhD Thesis Monitoring Committee Member, PhD Thesis Monitoring Committee Member, İhsan Dođramacı Bilkent Üniversitesi, December, 2020
PhD Thesis Monitoring Committee Member, PhD Thesis Monitoring Committee Member, İhsan Dođramacı Bilkent Üniversitesi, May, 2020

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **The Sphere Packing Bound for Memoryless Channels**
Nakiboglu B.
PROBLEMS OF INFORMATION TRANSMISSION, vol.56, no.3, pp.201-244, 2020 (SCI-Expanded)
- II. **A simple derivation of the refined sphere packing bound under certain symmetry hypotheses**
Nakibođlu B.
TURKISH JOURNAL OF MATHEMATICS, vol.44, no.3, pp.919-948, 2020 (SCI-Expanded)
- III. **The Sphere Packing Bound for DSPCs with Feedback à la Augustin**
NAKİBOĐLU B.
IEEE Transactions on Communications, vol.67, no.11, pp.7456-7467, 2019 (SCI-Expanded)
- IV. **The Augustin Capacity and Center**
Nakiboglu B.
PROBLEMS OF INFORMATION TRANSMISSION, vol.55, no.4, pp.299-342, 2019 (SCI-Expanded)
- V. **The Renyi Capacity and Center**
NAKİBOĐLU B.
IEEE TRANSACTIONS ON INFORMATION THEORY, vol.65, no.2, pp.841-860, 2019 (SCI-Expanded)
- VI. **The Sphere Packing Bound via Augustin's Method**

- NAKİBOĞLU B.
IEEE TRANSACTIONS ON INFORMATION THEORY, vol.65, no.2, pp.816-840, 2019 (SCI-Expanded)
- VII. **Bit-Wise Unequal Error Protection for Variable-Length Block Codes With Feedback**
NAKİBOĞLU B., Gorantla S. K., Zheng L., Coleman T. P.
IEEE TRANSACTIONS ON INFORMATION THEORY, vol.59, no.3, pp.1475-1504, 2013 (SCI-Expanded)
- VIII. **Errors-and-Erasures Decoding for Block Codes With Feedback**
NAKİBOĞLU B., Zheng L.
IEEE TRANSACTIONS ON INFORMATION THEORY, vol.58, no.1, pp.24-49, 2012 (SCI-Expanded)
- IX. **Variations on a Theme by Schalkwijk and Kailath**
Gallager R. G., NAKİBOĞLU B.
IEEE TRANSACTIONS ON INFORMATION THEORY, vol.56, no.1, pp.6-17, 2010 (SCI-Expanded)
- X. **Unequal Error Protection: An Information-Theoretic Perspective**
Borade S., NAKİBOĞLU B., Zheng L.
IEEE TRANSACTIONS ON INFORMATION THEORY, vol.55, no.12, pp.5511-5539, 2009 (SCI-Expanded)
- XI. **A Simple Converse of Burnashev's Reliability Function**
Berlin P., NAKİBOĞLU B., Rimoldi B., Telatar E. İ.
IEEE TRANSACTIONS ON INFORMATION THEORY, vol.55, no.7, pp.3074-3080, 2009 (SCI-Expanded)
- XII. **Error exponents for variable-length block codes with feedback and cost constraints**
NAKİBOĞLU B., Gallager R. G.
IEEE TRANSACTIONS ON INFORMATION THEORY, vol.54, no.3, pp.945-963, 2008 (SCI-Expanded)

Refereed Congress / Symposium Publications in Proceedings

- I. **A New Characterization Of Augustin Information And Mean**
Cheng H., Nakiboğlu B.
IEEE International Symposium on Information Theory (ISIT), Athens, Greece, 7 - 12 July 2024, pp.2538-2543
- II. **The Mutual Information In The Vicinity of Capacity-Achieving Input Distributions**
Cheng H., Nakiboğlu B.
2023 IEEE International Symposium on Information Theory, ISIT 2023, Taipei, Taiwan, 25 - 30 June 2023, vol.2023-June, pp.2111-2116
- III. **Augustin Information Measures on Fading Channels Under Certain Symmetry Hypothesis**
Yildiz M. F., Nakiboğlu B.
2022 IEEE International Symposium on Information Theory, ISIT 2022, Espoo, Finland, 26 June - 01 July 2022, vol.2022-June, pp.3061-3066
- IV. **On the Existence of the Augustin Mean**
Cheng H., Nakiboğlu B.
2021 IEEE Information Theory Workshop, ITW 2021, Virtual, Online, Japan, 17 - 21 October 2021
- V. **Refined Strong Converse for the Constant Composition Codes**
Cheng H., Nakiboğlu B.
2020 IEEE International Symposium on Information Theory, ISIT 2020, California, United States Of America, 21 - 26 July 2020, pp.2149-2154
- VI. **A Simple Derivation of the Refined SPB for the Constant Composition Codes**
Nakiboğlu B.
2019 IEEE International Symposium on Information Theory, ISIT 2019, Paris, France, 7 - 12 July 2019, pp.2659-2663
- VII. **The Augustin center and the sphere packing bound for memoryless channels**
NAKİBOĞLU B.
2017 IEEE International Symposium on Information Theory (ISIT), Aachen, Germany, Germany, 25 - 30 June 2017
- VIII. **Bit-wise Unequal Error Protection for Variable Length Blockcodes with Feedback**
Gorantla S. K., NAKİBOĞLU B., Coleman T. P., Zheng L.

2010 IEEE International Symposium on Information Theory, Austin, United States Of America, 13 July 2010, pp.241-245

- IX. **Sphere-packing bound for block-codes with feedback and finite memory**
Giacomo C., NAKİBOĞLU B.
2010 IEEE International Symposium on Information Theory, Austin, TX, USA, United States Of America, 13 - 18 June 2010, pp.251-255
- X. **Upper bounds to error probability with feedback**
NAKİBOĞLU B., Zheng L.
2009 47th Annual Allerton Conference on Communication, Control, and Computing (Allerton), Monticello, IL, United States Of America, 30 September - 02 October 2009, pp.865-871
- XI. **Upper Bounds to Error Probability with Feedback**
NAKİBOĞLU B., Zheng L.
2009 IEEE International Symposium on Information Theory, Seoul, South Korea, 28 June - 03 July 2009, pp.1515-1519
- XII. **Errors-and-erasures decoding for block codes with feedback**
NAKİBOĞLU B., Zheng L.
2008 IEEE International Symposium on Information Theory, Toronto, ON, Canada, Canada, 6 - 11 July 2008, pp.712-716
- XIII. **Some Fundamental Limits of Unequal Error Protection**
Borade S., NAKİBOĞLU B., Zheng L.
2008 IEEE International Symposium on Information Theory, Toronto, Canada, 6 - 11 July 2008, pp.2222-2226
- XIV. **Error Exponents for Variable-length block codes with feedback and cost constraints**
NAKİBOĞLU B., Gallager R. G., Win M. Z.
2006 IEEE International Symposium on Information Theory, Seattle, WA, United States Of America, 9 - 14 July 2006, pp.74-78
- XV. **A high efficiency power amplifier at x-band for satellite communication**
Sen O., Dudak C., Nakiboglu B.
21st International Communications Satellite Systems Conference and Exhibit, ICSSC 2003, Yokohama, Japan, 15 - 19 April 2003
- XVI. **A two stage solid state power amplifier at X-band for satellite communication**
Sen O., Dudak C., Nakiboglu B.
International Conference on Recent Advances in Space Technologies, İstanbul, Turkey, 20 - 22 November 2003, pp.630-634

Other Publications

- I. **Bilgi kuramı nedir?**
Nakiboğlu B.
Other, pp.1, 2021

Supported Projects

NAKİBOĞLU B., TUBITAK Project, Renyi/Augustin Bilgi Ölçüleri Ve Küre Sıkıştırma Sınırı İçin Augustin Yöntemi, 2019 - 2022

Scientific Refereeing

IEEE TRANSACTIONS ON INFORMATION THEORY, SCI Journal, September 2022

IEEE TRANSACTIONS ON COMMUNICATIONS, SCI Journal, September 2022
IEEE Information Theory Workshop , Conference Paper (Full Text), July 2022
IEEE International Symposium on Information Theory, Conference Paper (Full Text), March 2022
IEEE TRANSACTIONS ON CONTROL OF NETWORK SYSTEMS, SCI Journal, October 2021
IEEE TRANSACTIONS ON CONTROL OF NETWORK SYSTEMS, SCI Journal, October 2021
IEEE Information Theory Workshop, Conference Paper (Full Text), July 2021
IEEE TRANSACTIONS ON INFORMATION THEORY, SCI Journal, July 2021
IEEE International Symposium on Information Theory, Conference Paper (Full Text), March 2021
IEEE TRANSACTIONS ON CONTROL OF NETWORK SYSTEMS, SCI Journal, March 2021
IEEE International Symposium on Information Theory, Conference Paper (Full Text), March 2021
IEEE International Symposium on Information Theory, Conference Paper (Full Text), March 2021
IEEE TRANSACTIONS ON CONTROL OF NETWORK SYSTEMS, SCI Journal, March 2021
IEEE International Symposium on Information Theory, Conference Paper (Full Text), March 2021
IEEE International Symposium on Information Theory, Conference Paper (Full Text), March 2021
IEEE TRANSACTIONS ON INFORMATION THEORY, SCI Journal, February 2021
IEEE TRANSACTIONS ON INFORMATION THEORY, SCI Journal, December 2020
ENTROPY, SCI Journal, September 2020
COMMUNICATIONS IN MATHEMATICAL PHYSICS, SCI Journal, June 2020
IEEE International Symposium on Information Theory, Conference Paper (Full Text), February 2020
IEEE Transactions On Information Theory, SCI Journal, January 2020

Metrics

Publication: 29
Citation (WoS): 258
Citation (Scopus): 308
H-Index (WoS): 8
H-Index (Scopus): 9

Congress and Symposium Activities

2024 IEEE International Symposium on Information Theory , Attendee, Athens, Greece, 2024
2023 IEEE International Symposium on Information Theory , Attendee, Taipei, Taiwan, 2023
2021 IEEE Information Theory Workshop (ITW2021) , Attendee, Kanazawa, Japan, 2021
2020 IEEE International Symposium on Information Theory, Attendee, California, United States Of America, 2020
2019 IEEE International Symposium on Information Theory, Attendee, Paris, France, 2019

Invited Talks

Augustin's Information Measures and The Sphere Packing Bound, Seminar, Sabancı Üniversitesi, Turkey, October 2019

Awards

Nakiboğlu B., Araştırma Teşvik Ödülü, Odtü Prof. Dr. Mustafa N. Parlar Eğitim Ve Araştırma Vakfı, December 2019
Nakiboğlu B., Science Academy's Young Scientist Awards Program (BAGEP), Bilim Akademisi, April 2019