

## Asst. Prof. BARIŞ NAKİBOĞLU

### Personal Information

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### International Researcher IDs

ScholarID: A0hU4DgAAAAJ

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

ScopusID: 23492777100

Yoksis Researcher ID: 294510

### 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

Signals and Systems I, Undergraduate, 2024 - 2025, 2023 - 2024

Probability and Stochastic Processes, Postgraduate, 2024 - 2025, 2022 - 2023, 2021 - 2022

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

Probability and Random Variables, Undergraduate, 2022 - 2023, 2021 - 2022, 2019 - 2020

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, November 2023

IEEE TRANSACTIONS ON INFORMATION THEORY, SCI Journal, November 2023  
IEEE TRANSACTIONS ON INFORMATION THEORY, SCI Journal, September 2023  
IEEE TRANSACTIONS ON INFORMATION THEORY, SCI Journal, August 2023  
IEEE TRANSACTIONS ON INFORMATION THEORY, SCI Journal, July 2023  
IEEE TRANSACTIONS ON INFORMATION THEORY, SCI Journal, July 2023  
IEEE TRANSACTIONS ON INFORMATION THEORY, SCI Journal, June 2023  
IEEE TRANSACTIONS ON INFORMATION THEORY, SCI Journal, April 2023  
IEEE International Symposium on Information Theory , Conference Paper (Full Text), March 2023  
IEEE International Symposium on Information Theory , Conference Paper (Full Text), March 2023  
IEEE TRANSACTIONS ON INFORMATION THEORY, SCI Journal, February 2023  
IEEE TRANSACTIONS ON COMMUNICATIONS, SCI Journal, February 2023  
IEEE TRANSACTIONS ON INFORMATION THEORY, SCI Journal, February 2023  
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): 261

Citation (Scopus): 331

H-Index (WoS): 8

H-Index (Scopus): 10

## **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**

Nakibođlu B., Arařtırma Teřvik Ödülü, Odtü Prof. Dr. Mustafa N. Parlar Eđitim Ve Arařtırma Vakfı, December 2019

Nakibođlu B., Science Academy's Young Scientist Awards Program (BAGEP), Bilim Akademisi, April 2019