

## **Assoc. Prof. ZEYNEP NİHAN BERBERLER**

### **Personal Information**

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### **International Researcher IDs**

ScholarID: vP-fx8IAAAAJ

ORCID: 0000-0001-9179-3648

Publons / Web Of Science ResearcherID: Q-2070-2019

ScopusID: 57193712164

Yoksis Researcher ID: 33328

### **Education Information**

Doctorate, Ege University, Fen Bilimleri Enstitüsü, Bilgisayar Bilimleri (Dr), Turkey 2009 - 2014

Postgraduate, Ege University, Fen Bilimleri Enstitüsü, Bilgisayar Bilimleri (YI) (Tezli), Turkey 2007 - 2009

Undergraduate, Ege University, Faculty Of Science, Matematik Bölümü, Turkey 2003 - 2007

### **Dissertations**

Doctorate, Residual closeness in communication networks, Ege University, Fen Bilimleri Enstitüsü, Bilgisayar Bilimleri (Dr), 2014

Postgraduate, Bir grafin zedelenebilirliği ve ölçümü, Ege University, Fen Bilimleri Enstitüsü, Bilgisayar Bilimleri (YI) (Tezli), 2009

### **Research Areas**

Computer Sciences, Mathematics

### **Academic Titles / Tasks**

Associate Professor, Dokuz Eylül University, Fen Fakültesi, Bilgisayar Bilimleri Bölümü, 2020 - Continues

Assistant Professor, Dokuz Eylül University, Fen Fakültesi, Bilgisayar Bilimleri Bölümü, 2018 - 2020

Assistant Professor, Dokuz Eylül University, Fen Fakültesi, Bilgisayar Bilimleri Bölümü, 2014 - 2018

Lecturer, Izmir University Of Economics, Vocational School, Department Of Computer Technologies, 2014 - 2014

Research Assistant, Izmir University Of Economics, Faculty Of Engineering And Computer Sciences, 2008 - 2014

### **Academic and Administrative Experience**

Akademik Performans Komisyonu Üyesi, Dokuz Eylül University, Fen Fakültesi, Bilgisayar Bilimleri Bölümü, 2022 -

## **Continues**

FEDEK Bölüm Komisyon Üyeliği, Dokuz Eylül University, Fen Fakültesi, Bilgisayar Bilimleri Bölümü, 2021 - Continues  
Bölüm Akademik Teşvik Değerlendirme Komisyonu Üyesi, Dokuz Eylül University, Fen Fakültesi, Bilgisayar Bilimleri Bölümü, 2020 - Continues

Internship Committee Member, Dokuz Eylül University, Fen Fakültesi, Bilgisayar Bilimleri Bölümü, 2018 - Continues

## **Courses**

ÇİZGE KURAMI, Undergraduate, 2019 - 2020, 2018 - 2019, 2017 - 2018, 2016 - 2017, 2015 - 2016

SAYISAL ÇÖZÜMLEME, Undergraduate, 2019 - 2020, 2018 - 2019, 2015 - 2016

DOĞRUSAL CEBİR VE SAYISAL GEOMETRİ, Undergraduate, 2019 - 2020, 2018 - 2019, 2017 - 2018, 2016 - 2017, 2015 - 2016, 2014 - 2015

KOMBİNATORYAL OPTİMİZASYON, Undergraduate, 2019 - 2020, 2018 - 2019, 2014 - 2015

YÖNEYLEM ARAŞTIRMASI, Undergraduate, 2019 - 2020, 2018 - 2019

Bitirme Projesi, Undergraduate, 2019 - 2020, 2016 - 2017

TEKNİK İNGİLİZCE I, Undergraduate, 2018 - 2019, 2017 - 2018, 2016 - 2017, 2015 - 2016

TEKNİK İNGİLİZCE II, Undergraduate, 2018 - 2019, 2017 - 2018, 2016 - 2017, 2014 - 2015

ALGORİTMALARIN ANALİZİ VE TASARIMI, Undergraduate, 2017 - 2018, 2016 - 2017

TEMEL BİLGİSAYAR BİLİMLERİ, Undergraduate, 2017 - 2018

ALGORITHMS AND PROGRAMMING, Undergraduate, 2017 - 2018, 2016 - 2017

Hesaplama Kuramına Giriş, Undergraduate, 2015 - 2016

Information Technologies, Undergraduate, 2015 - 2016

Discrete Structures in Computer Science, Undergraduate, 2013 - 2014

## **Advising Theses**

Berberler Z. N., Agglomeration based network analysis, Postgraduate, A.ASENA(Student), 2022

Berberler Z. N., Computing the differential in graphs, Postgraduate, A.KANLI(Student), 2021

Berberler Z. N., Measuring the vulnerability in networks via link residual closeness, Postgraduate, E.YİĞİT(Student), 2019

## **Jury Memberships**

Doctorate, Doctorate, Ege Üniversitesi, December, 2020

Doctorate, Doctorate, Ege Üniversitesi, July, 2018

Post Graduate, Post Graduate, Ege Üniversitesi, August, 2015

Post Graduate, Post Graduate, İzmir Ekonomi Üniversitesi, June, 2015

## **Published journal articles indexed by SCI, SSCI, and AHCI**

### **I. Isolated Rupture in Composite Networks**

Yıldırım H. İ., Berberler Z. N.

INTERNATIONAL JOURNAL OF FOUNDATIONS OF COMPUTER SCIENCE, vol.34, no.4, pp.363-371, 2023 (SCI-Expanded)

### **II. Node and Link Vulnerability in Complete Multipartite Networks**

BERBERLER Z. N., Aytaç A.

International Journal of Foundations of Computer Science, 2023 (SCI-Expanded)

### **III. Isolated Rupture in Thorny Networks**

Yıldırım H. İ., Berberler Z. N.

- INTERNATIONAL JOURNAL OF FOUNDATIONS OF COMPUTER SCIENCE, vol.33, no.05, pp.429-438, 2022 (SCI-Expanded)
- IV. **Differential in complementary prisms**  
BERBERLER Z. N., Kanli A.  
NUMERICAL METHODS FOR PARTIAL DIFFERENTIAL EQUATIONS, vol.38, no.4, pp.936-946, 2022 (SCI-Expanded)
- V. **Agglomeration-Based Node Importance Analysis in Wheel-Type Networks**  
Berberler Z. N., Yildirim H. İ., Iltuzer T., Tunc I.  
INTERNATIONAL JOURNAL OF FOUNDATIONS OF COMPUTER SCIENCE, vol.32, no.3, pp.269-288, 2021 (SCI-Expanded)
- VI. **Differential in infrastructure networks**  
Kanli A., BERBERLER Z. N.  
RAIRO-OPERATIONS RESEARCH, vol.55, 2021 (SCI-Expanded)
- VII. **Efficient Identification of Node Importance Based on Agglomeration in Cycle-Related Networks**  
Kunt A. A., BERBERLER Z. N.  
INTERNATIONAL JOURNAL OF FOUNDATIONS OF COMPUTER SCIENCE, vol.31, no.7, pp.969-978, 2020 (SCI-Expanded)
- VIII. **Computing the Zagreb eccentricity indices of thorny graphs**  
BERBERLER Z. N.  
UTILITAS MATHEMATICA, vol.113, pp.209-217, 2019 (SCI-Expanded)
- IX. **Non-self-centrality in the corona product of graphs**  
BERBERLER Z. N., BERBERLER M. E.  
UTILITAS MATHEMATICA, vol.113, pp.109-119, 2019 (SCI-Expanded)
- X. **On computing the irregularity of R-corona product types of graphs**  
BERBERLER Z. N.  
Utilitas Mathematica, vol.112, pp.53-68, 2019 (SCI-Expanded)
- XI. **Link failure in wheel type networks**  
Yigit E., BERBERLER Z. N.  
INTERNATIONAL JOURNAL OF MODERN PHYSICS C, vol.30, no.9, 2019 (SCI-Expanded)
- XII. **A Note on the Link Residual Closeness of Graphs Under Join Operation**  
Yigit E., BERBERLER Z. N.  
INTERNATIONAL JOURNAL OF FOUNDATIONS OF COMPUTER SCIENCE, vol.30, no.3, pp.417-424, 2019 (SCI-Expanded)
- XIII. **Entropies of Composite Graphs**  
BERBERLER Z. N., BERBERLER M. E.  
IRANIAN JOURNAL OF SCIENCE AND TECHNOLOGY TRANSACTION A-SCIENCE, vol.42, pp.2301-2308, 2018 (SCI-Expanded)
- XIV. **NETWORK ROBUSTNESS AND RESIDUAL CLOSENESS**  
AYTAÇ A., BERBERLER Z. N.  
RAIRO-OPERATIONS RESEARCH, vol.52, no.3, pp.839-847, 2018 (SCI-Expanded)
- XV. **Link Vulnerability in Networks**  
BERBERLER Z. N., Yigit E.  
INTERNATIONAL JOURNAL OF FOUNDATIONS OF COMPUTER SCIENCE, vol.29, no.3, pp.447-456, 2018 (SCI-Expanded)
- XVI. **Robustness of Regular Caterpillars**  
AYTAÇ A., BERBERLER Z. N.  
INTERNATIONAL JOURNAL OF FOUNDATIONS OF COMPUTER SCIENCE, vol.28, no.7, pp.835-841, 2017 (SCI-Expanded)
- XVII. **Measuring the vulnerability in networks: a heuristic approach**  
BERBERLER M. E., BERBERLER Z. N.  
ARS COMBINATORIA, vol.135, pp.3-15, 2017 (SCI-Expanded)
- XVIII. **Binding Number and Wheel Related Graphs**

- AYTAÇ V., BERBERLER Z. N.  
INTERNATIONAL JOURNAL OF FOUNDATIONS OF COMPUTER SCIENCE, vol.28, no.1, pp.29-38, 2017 (SCI-Expanded)
- XIX. **Edge eccentric connectivity index of nanothorns**  
Berberler Z. N., Berberler M. E.  
BULGARIAN CHEMICAL COMMUNICATIONS, no.1, pp.165-170, 2016 (SCI-Expanded)
- XX. **The Modified Eccentric Connectivity Index of Nanocomposites**  
Odabas Z. N., BERBERLER M. E.  
JOURNAL OF COMPUTATIONAL AND THEORETICAL NANOSCIENCE, no.9, pp.2208-2212, 2015 (SCI-Expanded)
- XXI. **On the First Zagreb Index of Neighborhood Corona Graphs**  
OdabaS Z. N., BERBERLER M. E.  
JOURNAL OF COMPUTATIONAL AND THEORETICAL NANOSCIENCE, no.12, pp.2585-2587, 2014 (SCI-Expanded)
- XXII. **On the bondage number of middle graphs**  
Aytac A., Turaci T., Odabas Z. N.  
MATHEMATICAL NOTES, no.5-6, pp.795-801, 2013 (SCI-Expanded)
- XXIII. **The Edge Eccentric Connectivity Index of Dendrimers**  
Odabas Z. N.  
JOURNAL OF COMPUTATIONAL AND THEORETICAL NANOSCIENCE, vol.10, no.4, pp.783-784, 2013 (SCI-Expanded)
- XXIV. **Residual Closeness in Cycles and Related Networks**  
Odabas Z. N., AYTAÇ A.  
FUNDAMENTA INFORMATICAE, vol.124, no.3, pp.297-307, 2013 (SCI-Expanded)
- XXV. **RUPTURE DEGREE AND MIDDLE GRAPHS**  
Odabas Z. N., AYTAÇ A.  
COMPTES RENDUS DE L ACADEMIE BULGARE DES SCIENCES, vol.65, no.3, pp.315-322, 2012 (SCI-Expanded)
- XXVI. **RESIDUAL CLOSENESS OF WHEELS AND RELATED NETWORKS**  
AYTAÇ A., Odabas Z. N.  
INTERNATIONAL JOURNAL OF FOUNDATIONS OF COMPUTER SCIENCE, vol.22, no.5, pp.1229-1240, 2011 (SCI-Expanded)
- XXVII. **THE BONDAGE NUMBER OF SOME GRAPHS**  
AYTAÇ A., Odabas Z. N., Turaci T.  
COMPTES RENDUS DE L ACADEMIE BULGARE DES SCIENCES, vol.64, no.7, pp.925-930, 2011 (SCI-Expanded)
- XXVIII. **COMPUTING THE RUPTURE DEGREE IN COMPOSITE GRAPHS**  
AYTAÇ A., Odabas Z. N.  
INTERNATIONAL JOURNAL OF FOUNDATIONS OF COMPUTER SCIENCE, vol.21, no.3, pp.311-319, 2010 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Quasi-Laplacian energy of composite graphs**  
Berberler Z. N.  
Discrete Mathematics, Algorithms and Applications, vol.15, no.4, pp.22501121-225011211, 2023 (ESCI)
- II. **A NOVEL AVERAGE PARAMETER FOR NETWORK ANALYSIS**  
Aytaç V., Berberler Z. N.  
BULLETIN OF THE INTERNATIONAL MATHEMATICAL VIRTUAL INSTITUTE, vol.13, no.1, pp.31-40, 2023 (Peer-Reviewed Journal)
- III. **Generalized entropies of subdivision-corona networks**  
BERBERLER Z. N.  
Discrete Mathematics, Algorithms and Applications, 2023 (ESCI)
- IV. **Complexity of subdivision-vertex and subdivision-edge join graphs**  
Berberler Z. N.

- JOURNAL OF DISCRETE MATHEMATICAL SCIENCES AND CRYPTOGRAPHY, vol.25, no.6, pp.1809-1815, 2022 (ESCI)
- V. **Total irregularity of fractal graphs**  
BERBERLER Z. N.  
ASIAN-EUROPEAN JOURNAL OF MATHEMATICS, vol.15, no.07, 2022 (ESCI)
- VI. **Independent strong weak domination: A mathematical programming approach**  
BERBERLER M. E., UGURLU O., BERBERLER Z. N.  
DISCRETE MATHEMATICS ALGORITHMS AND APPLICATIONS, vol.12, no.5, 2020 (ESCI)
- VII. **Independent strong domination in complementary prisms**  
BERBERLER Z. N., BERBERLER M. E.  
ELECTRONIC JOURNAL OF GRAPH THEORY AND APPLICATIONS, vol.8, no.1, pp.1-8, 2020 (ESCI)
- VIII. **AVERAGE INDEPENDENT DOMINATION IN COMPLEMENTARY PRISMS**  
AYTAÇ V., BERBERLER Z. N.  
BULLETIN OF THE INTERNATIONAL MATHEMATICAL VIRTUAL INSTITUTE, vol.10, no.1, pp.157-164, 2020 (Peer-Reviewed Journal)
- IX. **DEGREE-BASED INVARIANTS OF MYCIELSKI CONSTRUCTION: IRREGULARITY, TOTAL IRREGULARITY, VARIANCE**  
BERBERLER Z. N.  
SIGMA JOURNAL OF ENGINEERING AND NATURAL SCIENCES-SIGMA MUHENDISLIK VE FEN BİLİMLERİ DERGİSİ, vol.37, no.3, pp.747-754, 2019 (ESCI)
- X. **STRONG WEAK DOMINATION: A MATHEMATICAL PROGRAMMING STRATEGY**  
UĞURLU O., BERBERLER M. E., BERBERLER Z. N.  
BULLETIN OF THE INTERNATIONAL MATHEMATICAL VIRTUAL INSTITUTE, vol.9, no.3, pp.513-519, 2019 (Peer-Reviewed Journal)
- XI. **Total Irregularity of Indu-Bala Product of Graphs**  
BERBERLER Z. N.  
Academic Platform Journal of Engineering and Science, vol.7, no.1, pp.52-55, 2019 (Peer-Reviewed Journal)
- XII. **INDEPENDENTLY SATURATED GRAPHS**  
BERBERLER Z. N., BERBERLER M. E.  
Turkish World Mathematical Society Journal of Applied and Engineering Mathematics, vol.8, no.1, pp.44-50, 2018 (ESCI)
- XIII. **Strong Independent Saturation in Complementary Prisms**  
BERBERLER Z. N.  
MATHEMATICAL SCIENCES AND APPLICATIONS E-NOTES, vol.6, no.1, pp.99-105, 2018 (Peer-Reviewed Journal)
- XIV. **Üçgen Matrisler Kullanılarak Yer ve Zaman Karmaşıklığının Azaltılması**  
BERBERLER M. E., BERBERLER Z. N.  
El-Cezeri Fen ve Mühendislik Dergisi, vol.5, no.1, pp.1-10, 2018 (Peer-Reviewed Journal)
- XV. **Kombinasyon Sayımlama İçin Bir Özeti Fonksiyon Önerisi**  
YARDIMCI M. O., BERBERLER Z. N.  
Kilis 7 Aralık Üniversitesi Fen ve Mühendislik Dergisi, vol.1, no.2, pp.63-67, 2017 (Peer-Reviewed Journal)
- XVI. **Independence Saturation In Complementary Product Types of Graphs**  
BERBERLER Z. N., BERBERLER M. E.  
Celal Bayar Üniversitesi Fen Bilimleri Dergisi, vol.13, no.2, pp.325-331, 2017 (Peer-Reviewed Journal)
- XVII. **RESIDUAL CLOSENESS FOR HELM AND SUNFLOWER GRAPHS**  
AYTAC A., BERBERLER Z. N.  
TWMS JOURNAL OF APPLIED AND ENGINEERING MATHEMATICS, vol.7, no.2, pp.209-220, 2017 (ESCI)
- XVIII. **Tek kaynaktan çıkan maksimum sayıdaki tepe ayrık yolların bulunması probleminin sayımlama tekniği ile etkin çözümü**  
BERBERLER M. E., BERBERLER Z. N.  
SAÜ Fen Bilimleri Enstitüsü Dergisi, vol.19, no.2, pp.213-219, 2015 (Peer-Reviewed Journal)
- XIX. **On Computing The Vulnerability Of Some Graphs As Average**  
AYTAÇ V., ODABAŞ Z. N.

## Refereed Congress / Symposium Publications in Proceedings

### I. COMPUTING THE DIFFERENTIAL OF SUNFLOWER GRAPHS

KANLI A., BERBERLER Z. N.

5th International Conference on Computational Mathematics and Engineering Sciences CMES-2021, Van, Turkey,  
08 June 2021

### II. Baskın Diferansiyel Tümleyen Prizmalar

KANLI A., BERBERLER Z. N.

14. ANKARA MATEMATİK GÜNLERİ, Ankara, Turkey, 28 - 29 June 2019, pp.4

### III. KOMBİNASYON VE PERMÜTASYON SAYIMLAMA İÇİN ÖZET FONKSİYON ÖNERİLERİ

BERBERLER M. E., YARDIMCI M. O., ELİYYİ U., BERBERLER Z. N.

1. ULUSLARARASI İSTATİSTİK MATEMATİK VE ANALİTİK YÖNTEMLER KONGRESİ, İstanbul, Turkey, 2 - 03 March  
2018, pp.37-38

### IV. AĞ ZEDELENEBİLİRLİK ÖLÇÜMLERİNİN KARMAŞIKLIK ANALİZİ

BERBERLER Z. N.

1. ULUSLARARASI İSTATİSTİK MATEMATİK VE ANALİTİK YÖNTEMLER KONGRESİ, İstanbul, Turkey, 2 - 03 March  
2018, pp.55-56

### V. COMPUTING THE LINK VULNERABILITY OF NETWORKS IN POLINOMIAL TIME

BERBERLER Z. N., YİĞİT E.

1. INTERNATIONAL UNIVERSITY INDUSTRY COOPERATION, RD AND INNOVATION CONGRESS, Manisa, Turkey, 18 -  
19 December 2017, pp.92

### VI. Ağlar için Zedelenebilirlik Parametrelerinden Baskınlık Sayısının Bulunması

ÖNDEŞ Y., BERBERLER Z. N., GENCER M., BERBERLER M. E.

Uluslararası Bilgisayar Bilimleri ve Mühendisliği Konferansı UBMK'16, Tekirdağ, Turkey, 20 - 23 October 2016

### VII. Döngü Çözümünde Optimum Değerin Bulunması Üzerine Deneysel Bir İnceleme

GENCER M., BERBERLER M. E., BERBERLER Z. N.

Uluslararası Bilgisayar Bilimleri ve Mühendisliği Konferansı UBMK'16, Tekirdağ, Turkey, 20 - 23 October 2016

### VIII. Finding Routes With Minimal Number Of Transfers For Public Transportation

NASİBOĞLU E., BERBERLER M. E., BERBERLER Z. N.

The 5th International Conference on Control and Optimization with Industrial Applications, Azerbaijan, 27 - 29  
August 2015

### IX. Middle Grafların ve Binomial Ağaçların Average Lower Independence Sayısı

ODABAŞ Z. N., AYTAÇ A.

XXI. Ulusal Matematik Sempozyumu, İstanbul, Turkey, 1 - 04 September 2008, pp.42

## Supported Projects

Berberler Z. N., TUBITAK Project, Karmaşık ağlarda yiğilmaya dayalı büzülme yöntemi ile tepe önemlerinin belirlenmesi,  
2019 - 2020

Berberler Z. N., Aytaç A., Project Supported by Higher Education Institutions, Bir Grafın Zedelenebilirliği ve Ölçümü, 2008  
- 2009

## Scientific Refereeing

BRAIN TOPOGRAPHY JOURNAL OF FUNCTIONAL NEUROPHYSIOLOGY, SCI Journal, April 2024

Journal of New Theory, Other Indexed Journal, March 2024

SCIENTIFIC REPORTS, SCI Journal, February 2024  
JOURNAL OF SUPERCOMPUTING, SCI Journal, December 2023  
FUNDAMENTA INFORMATICA, SCI Journal, December 2023  
PAMUKKALE UNIVERSITY JOURNAL OF ENGINEERING SCIENCES-PAMUKKALE UNIVERSITESI MUHENDISLIK BİLİMLERİ DERGİSİ, Journal Indexed in ESCI, October 2023  
APPLIED INTELLIGENCE, SCI Journal, September 2023  
THE COMPUTER JOURNAL, SCI Journal, August 2023  
JOURNAL OF MATHEMATICAL CHEMISTRY, SCI Journal, May 2023  
APPLIED INTELLIGENCE, SCI Journal, April 2023  
APPLIED INTELLIGENCE, SCI Journal, April 2023  
INTERNATIONAL JOURNAL OF FOUNDATIONS OF COMPUTER SCIENCE, Journal Indexed in SCI-E, January 2023  
CONNECTION SCIENCE, Journal Indexed in SCI-E, January 2023  
INTERNATIONAL JOURNAL OF FOUNDATIONS OF COMPUTER SCIENCE, SCI Journal, November 2022  
AKCE INTERNATIONAL JOURNAL OF GRAPHS AND COMBINATORICS, SCI Journal, November 2022  
INTERNATIONAL JOURNAL OF FOUNDATIONS OF COMPUTER SCIENCE, SCI Journal, October 2022  
PUNJAB UNIVERSITY JOURNAL OF MATHEMATICS, Journal Indexed in ESCI, September 2022  
Discrete Mathematics, Algorithms and Applications, Journal Indexed in ESCI, April 2022  
BULLETIN OF INTERNATIONAL MATHEMATICAL VIRTUAL INSTITUTE, Other Indexed Journal, April 2022  
THE COMPUTER JOURNAL, Journal Indexed in SCI-E, September 2021  
NUMERICAL METHODS FOR PARTIAL DIFFERENTIAL EQUATIONS, Journal Indexed in SCI-E, November 2020  
Romanian Journal of Mathematics and Computer Science, Other Indexed Journal, September 2020  
INTERNATIONAL JOURNAL OF FOUNDATIONS OF COMPUTER SCIENCE, Journal Indexed in SCI-E, January 2019  
KUWAIT JOURNAL OF SCIENCE, Journal Indexed in SCI-E, June 2018  
ARS COMBINATORIA, Journal Indexed in SCI-E, September 2015

## Metrics

Publication: 56  
Citation (WoS): 185  
Citation (Scopus): 166  
H-Index (WoS): 8  
H-Index (Scopus): 8

## Scholarships

BİDEP, TUBITAK, 2009 - 2014