

Asst. Prof. İLKER ÖZÇELİK

Personal Information

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International Researcher IDs

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Publons / Web Of Science ResearcherID: J-3620-2019

ScopusID: 50961423900

Yoksis Researcher ID: 238463

Biography

I received my MS degree in electrical engineering from the Syracuse University in 2010, and I received my PhD degree in electrical engineering in the Holcombe Department of Electrical and Computer Engineering, Clemson University, Clemson, South Carolina in 2015. I am currently an assistant professor with Department of Software Engineering, Eskişehir Osmangazi University, Eskişehir, Turkey. I am a member of IEEE and ACM. My research interests include network traffic analysis, network security, software defined networking, blockchain, security and privacy in intelligent systems.

Education Information

Doctorate, Clemson University, Collage of Engineering, Holcomb Dept. of Electrical and Computer Engineering, United States Of America 2010 - 2015

Postgraduate, Syracuse University, College of Engineering & Computer Science, Department of Electrical Engineering and Computer Science, United States Of America 2008 - 2010

Undergraduate, Marmara University, Faculty Of Technical Education, Electronic And Computer Education, Turkey 2000 - 2005

Foreign Languages

English, C2 Mastery

Dissertations

Doctorate, DoS Attack Detection and Mitigation, Clemson University, Collage of Engineering, Holcomb Dept. of Electrical and Computer Engineering, 2015

Postgraduate, Voice Activity Detection Using Stochastic Resonance, Syracuse University, College of Engineering & Computer Science, Department of Electrical Engineering and Computer Science, 2010

Research Areas

Communication Networks, Information Security and Reliability, Computer Networks, Communications and Network Protocols, Data Routing

Academic Titles / Tasks

Assistant Professor, Eskisehir Osmangazi University, MÜHENDİSLİK-MİMARLIK FAKÜLTESİ, Software Engineering , 2021 - Continues

Assistant Professor, Recep Tayyip Erdogan University, Mühendislik Ve Mimarlık Fakültesi, 2019 - 2021

Assistant Professor, Recep Tayyip Erdogan University, Mühendislik Fakültesi, Elektrik Ve Elektronik Mühendisliği Bölümü, 2016 - 2019

Research Assistant, Recep Tayyip Erdogan University, Mühendislik Fakültesi, Elektrik Ve Elektronik Mühendisliği Bölümü, 2015 - 2016

Academic and Administrative Experience

Head of Department, Recep Tayyip Erdogan University, Mühendislik Ve Mimarlık Fakültesi, Bilgisayar Mühendisliği, 2019 - 2021

Head of Department, Recep Tayyip Erdogan University, Mühendislik Fakültesi, Bilişim Sistemleri Mühendisliği Bölümü, 2017 - 2019

Courses

Bilgisayar Ağları, Undergraduate, 2023 - 2024, 2022 - 2023

Ağ Güvenliği, Undergraduate, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2020 - 2021

Engineering Research on Cyber Security, Undergraduate, 2023 - 2024, 2022 - 2023

Uzmanlık Alan Dersi, Postgraduate, 2024 - 2025, 2023 - 2024

Veri Yapıları, Undergraduate, 2024 - 2025, 2023 - 2024, 2022 - 2023, 2021 - 2022

YÜKSEK LİSANS TEZ ÇALIŞMASI(R), Postgraduate, 2024 - 2025, 2023 - 2024

Seminer, Postgraduate, 2023 - 2024, 2022 - 2023

Uygulamalı Ağ Güvenliği, Postgraduate, 2023 - 2024, 2021 - 2022

Tasarım Süreçleri, Undergraduate, 2022 - 2023

Engineering Research on Algorithms, Undergraduate, 2022 - 2023

Computer Programming, Undergraduate, 2021 - 2022

Advising Theses

Özçelik I., Kimlik Doğrulama Amaçlı Kriptografik Biriktirici Tasarımı ve Uygulaması, Postgraduate, N.Apaydın(Student), Continues

Özçelik I., Reliability and QoS (Quality of Service) of online service using Blockchain Auditing Purposes , Postgraduate, B.Alagha(Student), Continues

Özçelik I., Çekişmeli Saldırıları ve Zafiyet Yüzeyi, Postgraduate, A.Kılıç(Student), Continues

Yazıcı A., Özçelik I., Nesnelerin İnterneti Ağlarında Çekişmeli Saldırıların Tespiti, Doctorate, E.DEĞİRMENCİ(Student), 2021

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Adversarial Attack Detection Approach for Intrusion Detection Systems**
DEĞİRMENCİ E., ÖZÇELİK İ., YAZICI A.
IEEE Access, 2024 (SCI-Expanded)
- II. **Distributed Denial of Service (DDoS): A History**
Brooks R. R., ÖZÇELİK İ., Yu L., Oakley J., Tusing N.
IEEE Annals of the History of Computing, vol.44, pp.44-54, 2022 (SCI-Expanded)
- III. **Stealthy Domain Generation Algorithms**
Fu Y., Yu L., Hambolu O., ÖZÇELİK İ., Husain B., Sun J., Sapra K., Du D., Beasley C. T., Brooks R. R.
IEEE Transactions on Information Forensics and Security, vol.12, no.6, pp.1430-1443, 2017 (SCI-Expanded)
- IV. **Deceiving entropy based DoS detection**
ÖZÇELİK İ., Brooks R. R.
Computers and Security, vol.48, pp.234-245, 2015 (SCI-Expanded)

Articles Published in Other Journals

- I. **PERFORMANCE COMPARISON OF ECC LIBRARIES FOR IOT DEVICES**
Çekiş İ. K., Toros A., Apaydın N., Özçelik İ.
Eskişehir Technical University Journal of Science and and Technology A- Applied Sciences and Engineering, vol.25, no.2, pp.278-288, 2024 (Peer-Reviewed Journal)
- II. **Siber ağların risk analizi: Saldırı-savunma ağaçlarıyla temellendirilmiş niceliksel bir yaklaşım**
Ertem M., Özçelik İ.
Journal of innovative engineering and natural science (Online), vol.4, no.1, pp.113-125, 2023 (Peer-Reviewed Journal)
- III. **ROSIDS23: Network intrusion detection dataset for robot operating system**
Değirmenci E., Özçelik İ., Yazici A.
DATA IN BRIEF, vol.51, pp.109739, 2023 (ESCI)
- IV. **Scrybe: A Secure Audit Trail for Clinical Trial Data Fusion**
Oakley J., Worley C., Yu L., Brooks R. R., Özçelik İ., Skjellum A., Obeid J. S.
Digital Threats: Research and Practice, vol.0, no.0, pp.1-20, 2021 (Scopus)
- V. **An Overview of Cryptographic Accumulators**
Özçelik İ., Medury S., Broaddus J., Skjellum A.
An Overview of Cryptographic Accumulators, vol.0, no.0, pp.1-11, 2021 (Non Peer-Reviewed Journal)
- VI. **Siber Terör ve DDoS**
ATASEVER S., ÖZÇELİK İ., SAĞIROĞLU Ş.
Süleyman Demirel Üniversitesi Fen Bilimleri Enstitüsü Dergisi, vol.23, pp.227-233, 2019 (Peer-Reviewed Journal)

Books & Book Chapters

- I. **Distributed Denial of Service Attacks: Real-world Detection and Mitigation**
ÖZÇELİK İ., Brooks R. R.
Chapman and Hall/CRC, Boca Raton, FL, 2020
- II. **Evaluation and Design of Performable Distributed Systems**
Bhat N. B., Madurasinghe D., ÖZÇELİK İ., Brooks R. R., Venayagamoorthy G. K., Skjellum A.
in: Handbook of Advanced Performability Engineering, Krishna B. Misra, Editor, Springer, Cham, Cham, pp.211-227, 2020
- III. **Target tracking with self-organizing distributed sensors**
Brooks R. R., Griffin C., Friedlander D. S., Koch J., ÖZÇELİK İ.

in: Distributed Sensor Networks: Image and Sensor Signal Processing, S. Sitharama Iyengar, Richard R Brooks, Editor, Chapman Hall, Boca Raton, FL, pp.131-188, 2012

Refereed Congress / Symposium Publications in Proceedings

- I. **AN EMPIRICAL EVALUATION OF BLOCKCHAIN TRANSACTION SEARCH METHODS**
Alagha B., Özçelik İ.
AVRASYA 11th INTERNATIONAL CONFERENCE ON APPLIED SCIENCES, Toskent, Uzbekistan, 1 - 05 August 2024, pp.31-44
- II. **The Effects of Autoencoders on the Robustness of Deep Learning Models Saldiri Tespit Sistemlerindeki Otokodlayicilarin Derin Öğrenme Modellerinin Güçlülüğüne Etkisi**
DEĞİRMENCİ E., ÖZÇELİK İ., YAZICI A.
30th Signal Processing and Communications Applications Conference, SIU 2022, Safranbolu, Turkey, 15 - 18 May 2022
- III. **Effects of un targeted Adversarial Attacks on Deep Learning Methods**
DEĞİRMENCİ E., ÖZÇELİK İ., YAZICI A.
15th International Conference on Information Security and Cryptography, ISCTURKEY 2022, Ankara, Turkey, 19 - 20 October 2022, pp.8-12
- IV. **MQTT Security at a Glance**
ATILGAN E., ÖZÇELİK İ., YOLAÇAN E. N.
2021 International Conference on Information Security and Cryptology (ISCTURKEY), Ankara, Turkey, 2 - 03 December 2021, pp.138-142
- V. **CAPEN: Cryptographic Accumulator based Privacy Preserving Exposure Notification**
ÖZÇELİK İ.
9th International Symposium on Digital Forensics and Security, ISDFS 2021, Elazığ, Turkey, 28 - 29 June 2021
- VI. **CryptoRevocate: A Cryptographic Accumulator based Distributed Certificate Revocation List**
ÖZÇELİK İ., Skjellum A.
11th IEEE Annual Computing and Communication Workshop and Conference, CCWC 2021, Nevada, United States Of America, 27 - 30 January 2021, pp.865-872
- VII. **An overview of cryptographic accumulators**
ÖZÇELİK İ., Medury S., Broaddus J., Skjellum A.
7th International Conference on Information Systems Security and Privacy, ICISSP 2021, Virtual, Online, 11 - 13 February 2021, pp.661-669
- VIII. **An Overview of Machine Learning Based Approaches in DDoS Detection DDoS ALGILAMADA MAKINE OĞRENME TEMELİ YAKLASIMLARA GENEL BAKIS**
Atasever S., ÖZÇELİK İ., SAĞIROĞLU Ş.
28th Signal Processing and Communications Applications Conference, SIU 2020, Gaziantep, Turkey, 5 - 07 October 2020
- IX. **AN OVERVIEW OF MACHINE LEARNING BASED APPROACHES IN DDoS DETECTION**
Atasever S., Ozcelik İ., Sagiroglu S.
Signal Processing and Communications Applications Conference (SIU), Gaziantep, Turkey, 5 - 07 October 2020, pp.1-4
- X. **MARS: Machine learning based Adaptable and Robust Network Management for Software-defined Networks**
Kandah F., ÖZÇELİK İ., Huber B.
10th Annual Computing and Communication Workshop and Conference, CCWC 2020, Nevada, United States Of America, 6 - 08 January 2020, pp.586-591
- XI. **TRCyberLab: An infrastructure for future internet and security studies**
ÖZÇELİK İ., Akleylek S., Ozcelik I.
6th International Symposium on Digital Forensic and Security, ISDFS 2018, Antalya, Turkey, 22 - 25 March 2018,

pp.1-5

- XII. **Digital Freedom and Barriers**
ÖZÇELİK İ.
International Workshop Series on Digital Transformation and Artificial Intelligence, 28 December 2017
- XIII. **Cusum - Entropy: An efficient method for DDoS attack detection**
ÖZÇELİK İ., Brooks R. R.
4th International Istanbul Smart Grid Congress and Fair, ICSG 2016, İstanbul, Turkey, 20 - 21 April 2016
- XIV. **Detection and Mitigation of DDoS Attacks in Cyber Space**
ÖZÇELİK İ.
6th International Certificate Program on: International Cyber Security Workshop Certificate Program, 23 - 27 May 2016
- XV. **Deceiving entropy-based DoS detection**
ÖZÇELİK İ., Brooks R. R.
Signal Processing, Sensor/Information Fusion, and Target Recognition XXIII, Baltimore, MD, United States Of America, 5 - 08 May 2014, vol.9091
- XVI. **DoS detection is easier now**
ÖZÇELİK İ., Fu Y., Brooks R. R.
2013 2nd GENI Research and Educational Experiment Workshop, GREE 2013, Salt Lake City, UT, United States Of America, 20 - 22 March 2013, pp.50-55
- XVII. **Operational system testing for designed in security**
ÖZÇELİK İ., Brooks R. R.
8th Annual Cyber Security and Information Intelligence Research Workshop: Federal Cyber Security R and D Program Thrusts, CSIRW 2013, Oak Ridge, TN, United States Of America, 8 - 10 January 2013
- XVIII. **Security experimentation using operational systems**
ÖZÇELİK İ., Brooks R. R.
7th Annual Cyber Security and Information Intelligence Research Workshop: Energy Infrastructure Cyber Protection, CSIRW11, Oak Ridge, TN, United States Of America, 12 - 14 October 2011
- XIX. **Noise tolerant symbolic learning of Markov models of tunneled protocols**
Bhanu H., Schwier J., Craven R., ÖZÇELİK İ., Griffin C., Brooks R. R.
7th International Wireless Communications and Mobile Computing Conference, IWCMC 2011, İstanbul, Turkey, 4 - 08 July 2011, pp.1310-1314

Supported Projects

Özçelik I., TUBITAK Project, Ölçeklenebilir Uç Kimlik Doğrulama Çerçevesi, 2023 - 2026

Özçelik İ., Company, Veri Merkezi İzleme ve Anomali Tespit Sistemi, 2024 - 2024

Özçelik İ., Company, Siber Güvenlik Araştırma ve Geliştirme Projesi , 2023 - 2024

Özçelik I., Company, Otonom Sistemlerde DDoS Trafik Kaynağı Tespit Sistemi, 2023 - 2023

TUBITAK Project, DDOS ATTACK RESILIENT BLOCKCHAIN BASED X.509 REVOCATION LIST, 2018 - 2019

Özçelik I., Other International Funding Programs, Internet Freedom for West Africa Project, 2012 - 2016

Özçelik I., Other International Funding Programs, EAGER-GENI Experiments on Network Security and Traffic Analysis Project, 2010 - 2012

Activities in Scientific Journals

INTERNATIONAL JOURNAL OF INFORMATION SECURITY SCIENCE, Assistant Editor/Section Editor, 2024 - Continues
Eskişehir Osmangazi Üniversitesi mühendislik ve mimarlık fakültesi dergisi (online), Assistant Editor/Section Editor, 2024 - Continues

Memberships / Tasks in Scientific Organizations

Association for Computing Machinery (ACM), Member, 2014 - Continues, United States Of America
IEEE, Member, 2009 - Continues, United States Of America

Scientific Research / Working Group Memberships

Intelligent System Security (Iss) Lab, Eskisehir Osmangazi University, Türkiye, <http://isslab.ozcelikilker.com/>, 2021 - Continues

Metrics

Publication: 33
Citation (WoS): 132
Citation (Scopus): 207
H-Index (WoS): 5
H-Index (Scopus): 7

Scholarships

2219 INTERNATIONAL POST DOCTORAL RESEARCH FELLOWSHIP PROGRAMME, TUBITAK, 2019 - 2020
YLSY YURT DIŐI LİSANSÜSTÜ EĐİTİM BURSUSU, Ministry of Education, 2007 - 2015

Non Academic Experience

University, University of Tennessee at Chattanooga, SimCenter