

# Erdoğan Dođdu, Ph.D.

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Professor and Chair  
Angelo State University  
Department of Computer Science  
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## Research Interests

- Big data analytics
- Applied machine learning
- Knowledge Graphs
- Cybersecurity

Google Scholar h-index: 22 (Mar 2024)

## Education

**Case Western Reserve University**, Cleveland, USA

PhD in Computer Science, 1998

- Thesis: Real-Time Databases: Extended Transactions and the Utilization of Execution Histories
- Advisor: Prof. Dr. Gultekin Ozsoyoglu
- Topic: Real-time database systems, transaction processing, simulation

**Case Western Reserve University**, Cleveland, USA

MS in Computer Science, 1991

- Thesis: Estimation of Aggregate Relational Algebra Queries with Error-Constraints in Real-Time Databases
- Advisor: Prof. Dr. Gultekin Ozsoyoglu
- Topic: Real-time database systems, sampling, estimation

**Hacettepe University**, Ankara, Turkey

BS in Computer Science and Engineering, 1987

## Academic Experience

**Angelo State University**, San Angelo, Texas

**Computer Engineering Department**

Professor & Chair, Aug 2019 - present

- Google Scholar h-index 22, citations 2233 as of Mar 2024
- Student enrollment in Fall 2023 is 302 students, up from 229 in Spring 2019, 32% increase.
- New Data Science Certificate program (2023)
- New MS in Business Data Science & Analytics program with the College of Business (2022)
- New BS in Cybersecurity program (2022)
- New Minor in Cybersecurity Systems program (2021)
- Organizing Summer Cybersecurity (CyberPatriot) Camps (2022-present)
- Organizing Summer Code Camps (2020-present)
- Co-PI in NSA funded project to develop community development programs in cybersecurity (\$1,670,000 USD, Sep 2022 - Aug 2024)
- Co-PI in NSA funded project to develop minor and major programs in cybersecurity (\$295,402 USD, Sep 2021 - Aug 2022)
- New MS in Computer Science program (2021)

**Çankaya University**, Ankara, Turkey

**Computer Engineering Department**

Professor & Chair, Feb 2017- Jul 2019

- New PhD in Computer Science program (2018)
- Accreditation of the Computer Engineering program by MUDEK (2018)

**TOBB University of Economics and Technology**, Ankara, Turkey

**Computer Engineering Department**

Professor, Aug 2015 - Dec 2016

Chair & Assoc. Prof., Mar 2008 - Nov 2015

Associate Professor, Mar 2007 - Jul 2015

Assistant Professor, Jul 2004 - Feb 2007

- Founder and Director of IBM Big Data Lab (2014-2017)
- New PhD in Computer Engineering program (2008)
- New MS in Computer Engineering Program (2007)

**Georgia State University**, Atlanta, USA

**Computer Science Department**

Adjunct Asstistant Professor, Aug 2005 - now

Assistant Professor, Aug 2001 - Jun 2004

**Case Western Reserve University**, Cleveland, USA

**Computer Science Department**

Part-time Lecturer, Jan 1998 - Dec 1998

Research Assistant, Sep 1991 - Aug 1997

## Teaching Experience

**Angelo State University**, San Angelo, Texas [2019-present]

Introduction to Programming (Python) (CS 1314)

Java Programming (CS 1351)

Software Engineering (CS 4306)

Operating Systems (CS 4302)

Data Science (CS 4330)

Undergraduate Research (CS 4091)

Semantic Web (CS 6337)

Programming for Data Science (CS 6300)

Computer Networks (CS 6314)

Computer and Network Security (CS 6315)

Software Security (CS 6317)

Big Data (CS 6335)

**Çankaya University**, Ankara, Turkey [2017-2019]

Introduction to Programming (C) (CENG162)

Introduction to Computer Science (CENG105)

Software Engineering (CENG396)

Introduction to Data Science (Selected Topics in CS) (CENG499)

Big Data (CENG595)

Semantic Web (CENG685)

**TOBB University**, Ankara, Turkey [2004-2016]

Introduction to Programming (Java) (BIL141, BIL112)

Object-Oriented Design and Programming (BIL211)

Database Systems (BIL371, BIL106), Data Structures (BIL212)

Semantic Web (new course) (BIL546)

Distributed Data Processing and Analysis (new course) (BIL401, BIL501)

Internet Application Development (new course) (BIL554)

Software Development for Mobile Devices (BIL425)

Web and Databases (BIL471)

Introduction to Informatics (BIL101)

**Ahmet Yesevi University** (online) [2012-2015]

Semantic Web, Computer Networks

Object-Oriented Design and Programming

**Georgia State University**, Atlanta, USA [2001-2004]

Introduction to Programming (C++), Software Engineering

Database Systems, Databases and the Web

Network-Oriented Software Engineering (new course)

Analysis of Algorithms

**Case Western Reserve University**, Atlanta, USA [1998]

Introduction to Programming (C)

Database Systems

## Industrial Experience

**TUBITAK**, Ankara, Turkey

R&D Project Reviewer, 2005 - 2019

**Comodo/Nurd Software**, Ankara, Turkey

Consultant, 2018 - 2019

**DECE Software**, Ankara, Turkey

Consultant, 2018

**Basari Software**, Ankara, Turkey

Consultant, 2015 - 2017

**USTA Software**, Ankara, Turkey

Consultant, 2015 - 2016

**Huawei Research**, Istanbul, Turkey

Consultant, 2012

**ANEL Research**, Ankara, Turkey

Consultant, 2010-2011

**Voicecom**, Atlanta, USA  
Project Manager/Software Engineer, Jul 1999 - Jul 2001

**Voice-Tel Enterprises, Inc.**, Cleveland, USA  
Project Manager/Software Engineer, Jun 1998 - Jun 1999

**Computer Horizons**, Cleveland, USA  
Software Engineer, Sep 1997 - May 1998

## Awards and Fellowships

**The 2021 Texas A&M Engineering Experiment Station (TEES) Annual Research Conference Award**  
Project: A Deep-Defense Approach for Next-Gen Cyber-Resilient Interdependent Critical Infrastructure Systems, 2021-2023

**IBM Shared University Research Award**  
Project: Social Media Analytics, 2014

**Turkish Ministry of Education Scholarship for MS and PhD in CS**  
Case Western Reserve University, Cleveland, USA, 1988-1995

Memberships • ACM and IEEE

## Publications

### Journals - SCI-E Indexed Articles

- [1] Jeyhun Karimov, Murat Ozbayoglu, Bulent Tavli, and Erdogan Dogdu. "Menu Optimization for Multi-Profile Customer Systems on Large Scale Data". In: *Computational Economics, Springer* 1 (2022), pp. 221–242.
- [2] Omer B. Sezer, Erdogan Dogdu, and A. Murat Ozbayoglu. "Context Aware Computing, Learning and Big Data in Internet of Things: A Survey". In: *IEEE Internet of Things Journal* 5.1 (2018). [doc], pp. 1–27.
- [3] Semih Yumusak, Erdogan Dogdu, Halife Kodaz, and Andreas Kamilaris. "Classification of Linked Data Sources Using Semantic Scoring". In: *IEICE Transactions on Information and Systems* 101.1 (2018). [doc], pp. 99–107.
- [4] Bahram Lotfi Sadigh, Shahrzad Nikghadam, A Murat Ozbayoglu, Hakki Ozgur Unver, Erdogan Dogdu, and S Engin Kilic. "An Ontology based Multi-Agent Virtual Enterprise System (OMAVE), Part 2: Partner Selection". In: *Int. Journal of Computer Integrated Manufacturing* (2017). [doc], 24 pages.
- [5] Bahram Lotfi Sadigh, Hakki Ozgur Unver, Shahrzad Nikghadam, Erdogan Dogdu, A Murat Ozbayoglu, and S Engin Kilic. "An Ontology based Multi-Agent Virtual Enterprise System (OMAVE): Part 1: Domain modelling and Rule Management". In: *Int. Journal of Computer Integrated Manufacturing* 30.2-3 (2017). [doc], pp. 320–343.
- [6] Huseyin Ugur Yildiz, Bulent Tavli, Behnam Ojaghi, and Erdogan Dogdu. "The Impact of Incapacitation of Multiple Critical Sensor Nodes on Wireless Sensor Network Lifetime". In: *IEEE Wireless Communications Letters* 6.3 (2017). [doc], pp. 306–309.

- [7] Semih Yumusak, Erdogan Dogdu, Halife Kodaz, and Andreas Kamilaris. "SpEnD: Linked Data SPARQL End-points Discovery Using Search Engines". In: *IEICE Tran. on Information and Systems* 100.4 (2017). [doc], pp. 758–767.
- [8] Yüksel Totan, Emre Güler, Fatma B. Gürağaç, Erkam Uzun, and Erdogan Dogdu. "Brilliant blue G assisted macular surgery: the effect of air infusion on contrast recognisability in internal limiting membrane peeling". In: *British Journal of Ophthalmology* 99.1 (2015), pp. 75–80.
- [9] Alper Aksac, Orkun Ozturk, and Erdogan Dogdu. "A novel semantic web browser for user centric information retrieval: PERSON". In: *Expert Systems with Applications* 39.15 (2012), pp. 12001–12013.
- [10] Elif Derya Ubeyli and Erdogan Dogdu. "Automatic detection of erythemato-squamous diseases using k-means clustering". In: *Journal of Medical Systems* 34.2 (2010), pp. 179–184.
- [11] Erdogan Dogdu. "Utilization of execution histories in scheduling real-time database transactions". In: *Data & Knowledge Engineering* 57.2 (2006), pp. 148–178.
- [12] Fuyu Liu and Erdogan Dogdu. "A user management system for federated databases using web services". In: *Lecture Notes in Computer Science - Proc. of the 2006 Int. Conf. on Computational Science and Its Applications* 3983 (2006), pp. 88–97.
- [13] Erdogan Dogdu and Venkata Mamidenna. "Efficient scheduling strategies for web services-based e-business transactions". In: *Lecture Notes in Computer Science - Proc. of the 2005 Int. Workshop on Technologies for E-Services* 3811 (2005), pp. 113–125.
- [14] Praveen Madiraju, Sushil K Prasad, Rajshekhar Sunderraman, and Erdogan Dogdu. "An agent module for a system on mobile devices". In: *Lecture Notes in Artificial Intelligence - Int. Workshop on Agents and P2P Computing* 3601 (2004), pp. 144–152.
- [15] Sushil K Prasad, Vijay Madiseti, Shamkant B Navathe, Raj Sunderraman, Erdogan Dogdu, Anu Bourgeois, Michael Weeks, Bing Liu, Janaka Balasooriya, Arthi Hariharan, et al. "SyD: A Middleware Testbed for Collaborative Applications over Small Heterogeneous Devices and Data Stores". In: *Lecture Notes in Computer Science* 3231 (2004), pp. 352–371.
- [16] Veli Hakkoymaz, F Znati, and Erdogan Dogdu. "User Control and Dynamic Reorganization of Multimedia Presentations During Payout". In: *Int. Journal of Software Engineering and Knowledge Engineering* 7.03 (1997), pp. 371–395.
- [17] Erdogan Dogdu. "Scheduling adaptive transactions in real-time databases". In: *Lecture Notes in Computer Science - Int. Conf. on Database and Expert Systems Applications* 1134 (1996), pp. 130–142.

## Journals - Other Indexes

- [1] Michael Conklin, Roya Choupani, and Erdoğan Doğdu. "Is It Really a Man's World? Using Real-Life Negotiations to Reframe the Negotiation Gender Gap". In: *St. Louis University Law Journal* \_\_ (Forthcoming) (2023).
- [2] Michael Conklin, Roya Choupani, and Erdoğan Doğdu. "Peculiarity of the Precise Number Effect: Efficacy of Precise Initial Offers on Pawn Stars Negotiations". In: *Available at SSRN* 4475763 (2023).
- [3] Muhammed Akif Ağca, Şenol Ataç, Mehmet Mert Yücesan, Yusuf Gökhan Küçükayan, Ahmet Murat Özbayoğlu, and Erdoğan Doğdu. "Opinion mining of microblog texts on Hadoop ecosystem". In: *Int. Journal of Cloud Computing* 5.1-2 (2016). (ProQuest, Inspec, Google Scholar indexed), pp. 79–90.
- [4] Amna Basharat, I Budak Arpinar, Shima Dastgheib, Ugur Kursuncu, Krys Kochut, and Erdogan Dogdu. "Semantically enriched task and workflow automation in crowdsourcing for linked data management". In: *Int. Journal of Semantic Computing* 8.04 (2014). (Ebsco, Inspec, ProQuest, Google Scholar indexed), pp. 415–439.

- [5] Semih Yumusak, Erdogan Dogdu, and Halife Kodaz. "Tagging Accuracy Analysis on Part-of-Speech Taggers". In: *Journal of Computer and Communications* 2.04 (2014). (Ebsco, Google Scholar indexed), pp. 157–162.

### Conference and Workshop Proceedings

- [1] Erdogan Doğdu, Roya Choupani, and Selim Surucu. "Detecting Political Polarization Using Social Media Data". In: *Southwest Data Science Conference*. Springer. 2023, pp. 158–170.
- [2] Hamza Haruna Mohammed, Erdogan Doğdu, Roya Choupani, and Tomiya SA Zarbega. "Distributed Query Processing and Reasoning Over Linked Big Data". In: *Southwest Data Science Conference*. Springer. 2022, pp. 158–170.
- [3] Eman Hammad, Abhijit Nag, Anitha Chennamaneni, Mohsen Aghashahi, and Erdogan Dogdu. "A Deep-Defense Approach for Next-Gen Cyber-Resilient Inter-Dependent Critical Infrastructure Systems". In: *Proc. of 2021 Resilience Week (RWS) (Poster)*. 2021.
- [4] Betul Bayrak, Roya Choupani, and Erdogan Dogdu. "Link Prediction in Knowledge Graphs with Numeric Triples Using Clustering". In: *2020 IEEE Int. Conf. on Big Data (Big Data)*. IEEE. Dec. 2020.
- [5] Hamza Haruna Mohammad, Erdogan Dogdu, Abdul Kadir Gorur, and Roya Choupani. "Multi-Label Classification of Text Documents Using Deep Learning". In: *2020 IEEE Int. Conf. on Big Data (Big Data)*. IEEE. Dec. 2020.
- [6] Osama Faker and Erdogan Dogdu. "Intrusion Detection Using Big Data and Deep Learning Techniques". In: *Proc. of the 2019 ACM Southeast Conference*. ACM. 2019, pp. 86–93.
- [7] Bugra Cakir and Erdogan Dogdu. "Malware classification using deep learning methods". In: *Proc. of the South-East Conference*. ACM. 2018, p. 10.
- [8] Erdogan Dogdu, Murat Ozbayoglu, Ali Yazici, and Ziya Karakaya. "Perceptions, Expectations and Implementations of Big Data in Public Sector". In: *Computer Science and Engineering (UBMK), 2018 Int. Conf. on*. IEEE. 2018.
- [9] Onur Göker, Nazli Nazli, Mehmet Murat Erol, Roya Choupani, and Erdogan Dogdu. "A Robust Watermarking Scheme Over Quadrant Medical Image in Discrete Wavelet Transform Domain". In: *2018 5th Int. Conf. on Control, Decision and Information Technologies (CoDIT)*. IEEE. 2018, pp. 277–282.
- [10] Reza Hassanpour, Erdogan Dogdu, Roya Choupani, Onur Goker, and Nazli Nazli. "Phishing e-mail detection by using deep learning algorithms". In: *Proc. of the ACMSE 2018 Conference*. ACM. 2018, p. 45.
- [11] Aras Can Onal, Omer Berat Sezer, Murat Ozbayoglu, and Erdogan Dogdu. "MIS-IoT: Modular Intelligent Server Based Internet of Things Framework with Big Data and Machine Learning". In: *2018 IEEE Int. Conf. on Big Data (Big Data)*. IEEE. Dec. 2018.
- [12] Semih Yumusak, Andreas Kamilaris, Erdogan Dogdu, Halife Kodaz, Elif Uysal, and Riza Emre Aras. "A Discovery and Analysis Engine for Semantic Web". In: *Companion of the The Web Conference 2018 on The Web Conference 2018*. Int. World Wide Web Conferences Steering Committee. 2018, pp. 1497–1505.
- [13] Aras Can Onal, Omer Berat Sezer, Murat Ozbayoglu, and Erdogan Dogdu. "Weather data analysis and sensor fault detection using an extended IoT framework with semantics, big data, and machine learning". In: *2017 IEEE Int. Conf. on Big Data (Big Data)*. Dec. 2017, pp. 2037–2046. DOI: 10.1109/BigData.2017.8258150.
- [14] Kasim Öztoprak, Sina Layazali, and Erdogan Dogdu. "Topic Distribution Constant Diameter Overlay Design Algorithm (TD-CD-ODA)". In: *Semantic Computing (ICSC), 2017 IEEE 11th Int. Conf. on*. [doc]. IEEE. 2017, pp. 482–487.

- [15] Omer Berat Sezer, A Murat Ozbayoglu, and Erdogan Dogdu. "A Deep Neural-Network based Stock Trading System based on Evolutionary Optimized Technical Analysis Parameters". In: *Proc. of the Complex Adaptive System Conference, Procedia Computer Science*. Vol. 114. [doc]. Elsevier, 2017, pp. 473–480.
- [16] Omer Berat Sezer, A Murat Ozbayoglu, and Erdogan Dogdu. "An Artificial Neural Network-based Stock Trading System Using Technical Analysis and Big Data Framework". In: *Proc. of the ACM SouthEast Conference*. [doc]. ACM. 2017, pp. 223–226.
- [17] Elif Uysal, Semih Yumusak, Kasim Oztoprak, and Erdogan Dogdu. "Sentiment Analysis for the Social Media: A Case Study for Turkish General Elections". In: *Proc. of the SouthEast Conference*. [doc]. ACM. 2017, pp. 215–218.
- [18] Behnam Ojaghi Kahjogh, Jeyhun Karimov, and Erdogan Dogdu. "EDL: A Framework for Entity Disambiguation and Linking to Knowledgebases". In: *Proc. of the 2016 IEEE Tenth Int. Conf. on Semantic Computing (ICSC)*. IEEE. 2016, pp. 168–169.
- [19] Sercan Kulcu and Erdogan Dogdu. "A Scalable Approach for Sentiment Analysis of Turkish Tweets and Linking Tweets To News". In: *Proc. of the 2016 IEEE Tenth Int. Conf. on Semantic Computing (ICSC)*. IEEE. 2016, pp. 471–476.
- [20] Sercan Kulcu, Erdogan Dogdu, and A. Murat Ozbayoglu. "A Survey on Semantic Web and Big Data Technologies for Social Network Analysis". In: *IEEE Int. Conf. on Big Data*. IEEE. 2016, 10 pages.
- [21] Busra Mutlu, Merve Mutlu, Kasim Oztoprak, and Erdogan Dogdu. "Identifying Trolls and Determining Terror Awareness Level in Social Networks Using a Scalable Framework". In: *IEEE Int. Conf. on Big Data*. IEEE. 2016, 7 pages.
- [22] Murat Ozbayoglu, Gokhan Kucukayan, and Erdogan Dogdu. "A Real-Time Autonomous Highway Accident Detection Model Based on Big Data Processing and Computational Intelligence". In: *IEEE Int. Conf. on Big Data*. IEEE. 2016, 7 pages.
- [23] Ethem Cem Ozkan, Muhammad Saleem, Erdogan Dogdu, and Axel-Cyrille Ngonga. "UPSP: Unique Predicate-based Source Selection for SPARQL Endpoint Federation". In: *Proc. of the PROFILES Workshop at Extended Semantic Web Conference (ESWC)*. 2016, pp. 1–15.
- [24] Omer Berat Sezer, Erdogan Dogdu, Murat Ozbayoglu, and Aras Onal. "An Extended IoT Framework with Semantics, Big Data, and Analytics". In: *IEEE Int. Conf. on Big Data*. IEEE. 2016, 8 pages.
- [25] Mehmet Mert Yucesan and Erdogan Dogdu. "News Clustering Using Linked Data Resources and Their Relationships". In: *Proc. of the Int. Conf. on Artificial Intelligence and Data Processing (IDAP)*. 2016, pp. 435–440.
- [26] Semih Yumusak, Emir Munoz, Pasquale Minervini, Erdogan Dogdu, and Halife Kodaz. "A Hybrid Method for Rating Prediction Using Linked Data Features and Text Reviews". In: *Proc. of the 5th Workshop on Knowledge Discovery and Data Mining meets Linked Open Data (Know@ LOD) (Linked Data Mining Challenge Award)*. 2016, pp. 1–4.
- [27] Jeyhun Karimov, Murat Ozbayoglu, and Erdogan Dogdu. "k-means Performance Improvements with Centroid Calculation Heuristics both for Serial and Parallel environments". In: *Proc. of the 2015 IEEE Int. Congress on Big Data*. IEEE. 2015, pp. 444–451.
- [28] Jeyhun Karimov, Murat Ozbayoglu, Bulent Tavli, and Erdogan Dogdu. "Generic menu optimization for multi-profile customer systems". In: *Proc. of the 2015 IEEE Int. Symposium on Systems Engineering (ISSE)*. IEEE. 2015, pp. 163–169.
- [29] Omer Berat Sezer, Serdar Zafer Can, and Erdogan Dogdu. "Development of a smart home ontology and the implementation of a semantic sensor network simulator: An internet of things approach". In: *Proc. of the 2015 Int. Conf. on Collaboration Technologies and Systems (CTS)*. IEEE. 2015, pp. 12–18.

- [30] Amna Basharat, I Budak Arpinar, Shima Dastgheib, Ugur Kursuncu, Krys Kochut, and Erdogan Dogdu. "CrowdLink: Crowdsourcing for large-scale linked data management". In: *Proc. of the 2014 IEEE Int. Conf. on Semantic Computing (ICSC)*. IEEE. 2014, pp. 227–234.
- [31] Erdogan Dogdu, Sherzod Hakimov, and Semih Yumusak. "A data-model driven web application development framework". In: *Proc. of the 2014 ACM Southeast Regional Conference*. ACM. 2014, 47:1–47:4.
- [32] Erdogan Dogdu, Bahadir Katipoglu, and Umutcan Guney. "Waste Management Information System". In: *Knowledge Engineering and Ontology Development (KEOD 2014) part of the Int. Joint Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management IC3K*. 2014, pp. 312–318.
- [33] Erdoğan Doğdu, A Murat Özbayoğlu, Okan Benli, Hülya Erdener Akınç, Erdeniz Erol, Tuğrul Atasoy, Ozan Güreç, and Özden Erçin. "Ontology-centric data modelling and decision support in smart grid applications: A distribution service operator perspective". In: *Proc. of the 2014 IEEE Int. Conf. on Intelligent Energy and Power Systems (IEPS)*. IEEE. 2014, pp. 198–204.
- [34] B Lotfi Sadigh, HÖ Ünver, E Dogdu, and SE Kılıç. "Ontology based Virtual Enterprise System Domain Modeling". In: *Proc. of the 24th Int. Conf. on Flexible Automation and Intelligent Manufacturing (FAIM)*. 2014, 9 pages.
- [35] Semih Yumusak, Erdogan Dogdu, and Halife Kodaz. "A short survey of linked data ranking". In: *Proc. of the 2014 ACM Southeast Regional Conference*. ACM. 2014, 48:1–48:4.
- [36] Erdogan Dogdu and Onur Soyer. "MoReCon: a mobile restful context-aware middleware". In: *Proc. of the 51st ACM Southeast Conference*. ACM. 2013, 37:1–37:6.
- [37] Sherzod Hakimov, Hakan Tunc, Marlen Akimaliev, and Erdogan Dogdu. "Semantic question answering system over linked data using relational patterns". In: *Proc. of the Joint EDBT/ICDT 2013 Workshops*. ACM. 2013, pp. 83–88.
- [38] A Talha Kabakus and Erdoğan Dogdu. "Linked Data Üzerinden Doğal Dil Sorgularını Cevaplayan Sistem". In: *10th National Software Engineering Symposium*. 2013, pp. 1–14.
- [39] Suleyman Uludag, M Fatih Demirci, Erdogan Dogdu, and Fahri Aydos. "Pedagogical analysis and multifaceted evaluation of an engineering co-op program". In: *2013 IEEE Frontiers in Education Conference (FIE)*. IEEE. 2013, pp. 438–444.
- [40] Sherzod Hakimov, Salih Atilay Oto, and Erdogan Dogdu. "Named entity recognition and disambiguation using linked data and graph-based centrality scoring". In: *Proc. of the 4th Int. Workshop on Semantic Web Information Management*. ACM. 2012, 4:1–4:7.
- [41] B Lotfi Sadigh, HO Ünver, E Dogdu, and SE Kilic. "An Ontology Based Model for Virtual Enterprise". In: *Proc. of 15th Int. Conf. on Machine Design and Production, UMTIK 2012, Denizli, Turkey, June 19*. Vol. 22. 2012, pp. 885–898.
- [42] Erdogan Dogdu and Ali Nihat Cicek. "Accessing and Updating Electronic Health Records Using RESTful Web Services". In: *Proc. of the 2011 Int. Conf. on Semantic Web and Web Services (SWWS 2011)*. 2011, pp. 34–37.
- [43] Erdogan Dogdu and Abdullah Battal. "A TV Recommendation System Using Semantic Web." In: *Proc. of the 2010 Int. Conf. on Semantic Web and Web Services (SWWS 2010)*. 2010, pp. 34–37.
- [44] Erdogan Dogdu. "Semantic web in eHealth". In: *Proc. of the 47th ACM Southeast Regional Conference*. ACM. 2009, 73:1–73:4.
- [45] Erdogan Dogdu and Omer Mescigil. "Dynamic Selection of Web Services Using QoS Constraints in BPEL." In: *Proc. of the 17th Int. Conf. on Software Engineering and Data Engineering (SEDE2008)*. 2008, pp. 222–226.



- [46] Erdogan Dogdu, Jianwei Zhuang, and Sushil K. Prasad. "Design and Implementation of a Middleware for Mobile Networked Devices and Applications". In: *Proc. of the 2007 Int. Conf. on Software Engineering Research & Practice, SERP 2007, Volume I, June 25-28, 2007, Las Vegas Nevada, USA*. 2007, pp. 261–268.
- [47] Erdogan Dogdu, Yanchao Wang, and Swetha Desetty. "A Generic Database Web Service". In: *Proceesings of the 2006 Int. Conf. on Semantic Web and Web Services (SWWS 2006)*. 2006, pp. 117–121.
- [48] Saeid Belkasim, Pooja Bhatia, Wissam Ramlawi, Somasheker Akkaladevi, and Erdogan Dogdu. "Strip and line discrete cosine transforms for blocking artifact reduction". In: *Proc. of the 48th Midwest Symposium on Circuits and Systems*. IEEE. 2005, pp. 1693–1695.
- [49] Bing Liu, Sushil K Prasad, and Erdogan Dogdu. "A small listener for heterogeneous mobile devices: a service enabler with a uniform Web object view". In: *IEEE Int. Conf. on Web Services (ICWS2005)*. IEEE. 2005, pp. 1–8.
- [50] Rajshekhar Sunderraman, Erdogan Dogdu, Praveen Madiraju, and Laxmikanth Malladi. "A Java API for global querying and updates for a system of databases". In: *Proc. of the 43rd ACM Southeast Regional Conference*. ACM. 2005, pp. 245–249.
- [51] SO Belkasim, Y Li, E Dogdu, X Hong, and Z Li. "Contented-based image retrieval in biological databases". In: *Proc. of Int. Conf. on Computational Intelligence*. 2004, pp. 512–515.
- [52] Erdogan Dogdu. "Scheduling Web Services Transactions." In: *Proc. of the 2004 Int. Conf. on Internet Computing*. 2004, pp. 727–732.
- [53] Arthi Hariharan, Sushil K Prasad, Anu G Bourgeois, Erdogan Dogdu, Shamkant B Navathe, Raj Sunderraman, and Yi Pan. "A Framework for Constraint-Based Collaborative Web Service Applications and A Travel Application Case Study." In: *Proc. of the 2004 Int. Conf. on Internet Computing*. 2004, pp. 866–872.
- [54] Edward Heinz and Erdogan Dogdu. "Enhancements to Securing XML Web Services." In: *Proc. of the 2004 Int. Conf. on Internet Computing*. 2004, pp. 808–816.
- [55] Jagbir S Hooda, Erdogan Dogdu, and Raj Sunderraman. "Health Level-7 compliant clinical patient records system". In: *Proc. of the 2004 ACM symposium on Applied Computing (ACM SAC)*. ACM. 2004, pp. 259–263.
- [56] Erdogan Dogdu and Raj Sunderraman. "A web services testing tool". In: *Proc. of the 7th IASTED Int. Conf. on Internet and Multimedia Systems and Applications*. 2003, pp. 1–5.
- [57] Bo Jin, Saeid Belkasim, and Erdogan Dogdu. "Web image transcoding and a proxy-based solution for small devices". In: *Proc. of the 46th IEEE Int. Midwest Symposium on Circuits & Systems*. Vol. 3. IEEE. 2003, pp. 1601–1603.
- [58] Sushil K Prasad, Anu G Bourgeois, Erdogan Dogdu, Raj Sunderraman, Yi Pan, Sham Navathe, and Vijay Madisetti. "Enforcing interdependencies and executing transactions atomically over autonomous mobile data stores using SyD link technology". In: *Proc. of the 23rd Int. Conf. on Distributed Computing Systems Workshops*. IEEE. 2003, pp. 803–809.
- [59] Sushil K Prasad, Anu G Bourgeois, Erdogan Dogdu, Raj Sunderraman, Yi Pan, Sham Navathe, and Vijay Madisetti. "Implementation of a calendar application based on SyD coordination links". In: *Proc. of the 2003 Int. Parallel and Distributed Processing Symposium*. IEEE. 2003, pp. 242–249.
- [60] Sushil K Prasad, Erdogan Dogdu, Raj Sunderraman, Bing Liu, and Vijay Madisetti. "Design and Implementation of a listener module for handheld mobile devices". In: *Proc. of 41st Annual ACM Southeast Conference*. 2003, pp. 7–8.
- [61] Erdogan Dogdu. "An Extended Web Services Framework". In: *Proc. of the Int. Conf. on Communications, Internet, and Information Technology*. 2002, pp. 455–460.

- [62] Erdogan Dogdu and Gultekin Ozsoyoglu. “Real-time transactions with execution histories: priority assignment and load control”. In: *Proc. of the 6th Int. Conf. on Information and Knowledge Management (CIKM)*. ACM. 1997, pp. 301–308.
- [63] Erdogan Dogdu and Gultekin Ozsoyoglu. “Adaptive real-time transactions and risk-based load control”. In: *Proc. of the Workshop on Databases: Active and Real-Time*. ACM. 1996, pp. 1–4.
- [64] Wen-Chi Hou, Gultekin Ozsoyoglu, and Erdogan Dogdu. “Error-constrained COUNT query evaluation in relational databases”. In: *Proc. of the 1991 ACM SIGMOD Int. Conf. on Management of Data*. ACM, 1991, pp. 278–287.

## Technical Reports

- [1] Sushil K Prasad, Vijay Madiseti, Raj Sunderraman, Erdogan Dogdu, Anu Bourgeois, Michael Weeks, Sham Navathe, Raghupathy Sivakumar, Yanqing Zhang, Yi Pan, et al. *A middleware for collaborative applications over a system of mobile devices (SyD): An implementation case study*. Tech. rep. Department of Computer Science, Georgia State University, 2003.

## Book Chapters

- [1] Erdogan Dogdu and Gultekin Ozsoyoglu. “Scheduling Nested Transactions in Real-Time Database Systems”. In: *Real-Time Database and Information Systems: Research Advances*. Ed. by Azer Bestavros and Victor Fay-Wolfe. Kluwer Academic Publishers, 1997. Chap. 7, pp. 105–130.

## Books

- [1] Erdogan Dogdu and Roya Choupani. *Python Programming and Problem Solving*. (Preliminary Edition). Cognella Academic Publishing, 2023. ISBN: 84129-1A-001.
- [2] Ali Yazici, Erdogan Dogdu, A. Murat Özbayoglu, Y. Murat Erten, and Oguz Ergin. *Java: An Introduction to Computer Programming*. (book in Turkish). Palme, 2007. ISBN: 978-9944-341-57-8.
- [3] Ali Yazici, Murat Erten, Erdogan Dogdu, and Anil Ustun. *Information Technologies*. (book in Turkish). TOBB ETU Publications, 2005. ISBN: 123123.

## Theses

- [1] Erdogan Dogdu. “Real-Time Databases: Extended Transactions and the Utilization of Execution Histories”. PhD thesis. Case Western Reserve University, 1998.
- [2] Erdogan Dogdu. “Estimation of aggregate relational algebra queries with error constraints”. MS Thesis. Case Western Reserve University, 1991.

## Funded Projects, Awards, and Grants

- Cybersecurity Education Innovation. Co-PI (PI: Dr. Greg White). Aug 2021-Jul 2023. Funding agency: NSA. Budget: 1.67 million USD.

- CyberEye Project. Co-PI (PI: Dr. Eman Hammad). Aug 2021-Jul 2023. The 2021 Texas A&M Engineering Experiment Station (TEES) Annual Research Conference Award (Top-tier). Budget: 10,000 USD.
- ASU Cybersecurity Capacity Building Project. Co-PI (PI: Dr. Topliff). Sep 2020 - Aug 2022. Funding agency: NSA. Budget: 295,402 USD.
- Predicting the Spread of COVID-19 Pandemic Using Machine Learning Models on Twitter Data, Funding: Undergraduate Faculty-Mentored Academic Grant from Angelo State University (2020-2021).
- Analysis of Political Polarization on Social Media During Elections Using Big Data, Machine Learning, and Distributed Graph Algorithms, Funding: Undergraduate Faculty-Mentored Academic Grant from Angelo State University (2020-2021).
- Measuring Political Polarization Using Social Media Data. New Faculty Start-up Research Grant from Angelo State University (2019-2020). Budget: 2,187 USD.
- Intelligent and Automatic Web Site Categorization and Fast Content-based Filtering, Funding Agency: TÜBİTAK TEYDEB, Research Consultant for Comodo (Ankara METU Technopark). Jan 2018 - Dec 2019. Budget: ~250,000 USD.
- Automatic Text Categorization System for Big Data, Funding Agency: TÜBİTAK TEYDEB, Research Consultant for DeCe Software. Sep 2017 - June 2018. Budget: ~170,000 USD.
- Standard M2M Software: Semantic and Big Data-Oriented IoT Framework and Applications. Funding Agency: TÜBİTAK TEYDEB, Research Consultant for Başarı Mobile. June 2015 - Dec 2016. Budget: ~350,000 USD.
- SmartConsume - Decision Support System for Natural Gas Consumers, Funding Agency: TÜBİTAK TEYDEB. Research Consultant for Usta Information Systems, Inc.. Dec 2014 - May 2016. Budget: ~170,000 USD.
- IBM Shared University Research (SUR) Award. PI. "Social Media Analytics Using Big Data, Semantic Web, and Crowdsourcing". Nov 2014 - Nov 2016. Budget: ~150,000 USD (software and hardware donation).
- SEAS: Smart Energy Aware Systems. Funding agency: European Union, ITEA2 Program. Research Consultant for EnerjiSA R&D. Feb 2014 - Dec 2016. Budget: 21 million Euro.
- STORK 2.0: Secure Identity Across Borders Linked. Funding agency: European Union, ICT-PSP Program. Consultant. Dec 2013 - Jun 2014. Budget: 18.6 million Euro.
- Analysis of R&D Infrastructure in Turkey for Biotechnological Product Development. Funding agency: Ministry of Health. Co-PI. Apr 2014 - Dec 2014. Budget: ~110,000 USD.
- Computational journalism, social & political conflict management and bio-surveillance. Funding agency: TÜBİTAK, 2221 Program. Jun 2014 - Aug 2014. Budget: 3,000 USD.
- Ontology-based Expert System: Waste Management Information System. Funding agency: Ministry of Science, Industry, and Technology, and TayTek R&D, SanTez Program. PI. Apr 2014 - Mar 2015. Budget: ~40,000 USD.
- Personalization of ATM Menus and Performance Optimization. Funding agency: Ministry of Science, Industry, and Technology, and Provus R&D (now MasterCard), SanTez Program. Co-PI (PI: Asst.Prof. Murat Ozbayoglu). Mar 2014 - Sep 2015. Budget: ~50,000 USD.

- Virtual Factory: Information System for Value-Added Product Development for SMEs. Funding agency: Ministry of Science, Industry, and Technology and OSTIM, SanTez Program. Co-PI (PI: Prof. Engin Kilic). Mar 2012 - Feb 2014. Budget: ~200,000 USD.
- Tele-Graf: Information Rich Personal Interactive Web TV. Funding agency: TÜBİTAK, TEYDEB Program. Consultant for Argela (of TürkTelekom). Jun 2010 - May 2011. Budget: ~200,000 USD.
- Automatic Web Services Engine. Funding agency: TÜBİTAK, 1001 Program. Oct 2005 - Sep 2006. Budget: ~15,000 USD.
- Planning Grant: Georgia State University Biomedical Computing Center. Co-PI (PI: Robert W. Harrison). Funding agency: US National Institute of Health. 2003 - 2004. Budget: 1,091,250 USD
- Networked Portable Platform (NP2) Technology Research. Co-PI (PI: Sushil Prasad). Funding agency: Yamacraw Mission, Yamacraw Research in Embedded Software Systems, State of Georgia (USA). 2003 - 2004. Budget: 90,000 USD
- System on Devices: A Middleware for Collaborative Applications on Handheld Devices. Co-PI (PI: Sushil Prasad). Funding agency: Yamacraw Mission, Yamacraw Research in Embedded Software Systems, State of Georgia (USD). 2002 - 2003. Budget: 318,000 USD
- System on Devices. Co-PI (PI: Sushil Prasad). Funding agency: Yamacraw Mission, Yamacraw Research in Embedded Software Systems, State of Georgia (USA). 2001 - 2002. Budget: 233,000 USD

## Theses Advised

- William Merry, MS Thesis: "Virtual Networking Cybersecurity and Vulnerabilities In Cloud Computing Applications: A Systematic Review", Angelo State University, 2023.
- Selim Surucu, MS Thesis: "Measuring Political Polarization Using Big Data", Cankaya Univ., 2020
- Betul Bayrak, MS Thesis: "Evaluation of Graph Embedding-Based Reasoning Over Knowledge Bases", Cankaya University, 2020
- Hamza Haruna Mohammed, MS Thesis: Multi-Label Classification of Text Documents Using Deep Learning, Cankaya University, 2019
- Osama Faker, MS Thesis: "Intrusion Detection Using Big Data and Deep Learning Techniques", Cankaya University, 2018
- Nazli Nazli, MS Thesis: "Analysis Of Machine Learning Based Spam Filtering Techniques", Cankaya University, 2017
- Onur Goker, MS Thesis: "Spam Filtering Using Big Data And Deep Learning", Cankaya Uni, 2017
- Semih Yumusak, (Co-advised), PhD Thesis: Dissertation: A novel method to discover and analyze linked data sources, Selçuk University, 2017
- Hussein Ali Ahmed Ahmed, MS Thesis: "Predicting The Risk of Seizing State Lands Using Data Mining Techniques", Cankaya University, 2017
- M. Mert Yucesan, MS Thesis: "News Clustering Using Linked Data", TOBB University, 2016
- Şenol Ataç, MS Thesis: "FeeQA: Hybrid Question Answering Over Linked Data", TOBB Uni., 2015

- Muhammed Akif Ağca, MS Thesis: “Performance Improvement via Distributed File Systems on Private Analytical Clouds”, TOBB University, 2015
- Ethem C. Özkan, MS Thesis: “Distributed Query Optimization Over Linked Data”, TOBB Univ., 2015
- Sherzod Hakimov, MS Thesis: “Named Entity Disambiguation Using Linked Data”, TOBB Univ., 2013
- Ozgur Eroglu, MS Thesis: “Efficient Storage And Querying Of Semantic Data On A Distributed System”, TOBB University, 2013
- Salih Atıl Oto, MS Thesis: “News Clustering Using Relations Between Named Entities”, TOBB University, 2012
- Ahmet Ömercioğlu, MS Thesis: “Online Customizable Ontology Development Environment For Semantic Web”, TOBB University, 2012
- Onur Soyer, MS Thesis: “MoReCon: Service-based and Context-Aware Middleware for Mobile Applications”, TOBB University, 2010
- Abdülhamit Maboçoğlu, MS Thesis: “Querying Ontologies Using Restful Web Services”, TOBB University, 2010
- Abdullah Battal, MS Thesis: “A TV Program Recommendation System Using Semantic Web”, TOBB University, 2009
- Ali Nihat Çiçek, MS Thesis: “Implementing E-Health Systems Using RESTful Web Services”, TOBB University, 2009
- Gökhan Öztöpez, MS Thesis: “Software As A Service: A Voice Communication Application Developed Using Service-Oriented Architecture”, TOBB University, 2009
- Ömer Mescigil, MS Thesis: “Dynamic Execution of BPEL Web Service Compositions Using QoS Constraints”, TOBB University, 2007
- Venkatta Mamidenna, MS Thesis: “Efficient Scheduling Strategies for Web Services Transactions”, Georgia State University, 2005.
- Hongbo Luo, MS Thesis: “Design and Implementation of a Peer-to-Peer Database”, Georgia State University, 2004
- Swetha Desetty, MS Thesis: “SOAP-JDBC: A Bridge Between Heterogeneous Clients and Data Sources”, Georgia State University, 2003
- Eddie Heinz, MS Thesis: “Web Services Security and A Java Security API”, Georgia State Uni, 2003
- Pooja Bhatia, MS Thesis: “A Server Module for Hosting Java Web Services On Personal Digital Assistants”, Georgia State University, 2003
- Fuyu Liu, MS Thesis: “A Federated Database User Management System Using Web Services”, Georgia State University, 2003
- Jagbir S. Hooda, MS Thesis: “Health Level-7 (HL7) Compliant Clinical Patient Records System”, Georgia State University, 2003
- Bing Liu, MS Thesis: “A Listener Module for Distributed Applications over Mobile Devices”, Georgia State University, 2003
- Lakshmi Yadlapati, MS Thesis: “A Web Services Testing Tool”, Georgia State University, 2002

## **Service**

### **Administrative**

- Department Chair, Computer Science Dept., Angelo State University, 2019-present
- Department Chair, Computer Eng. Dept., Çankaya University, 2017-2019
- Chair of Graduate Programs at Computer Engineering, Cankaya University, 2017-2019
- Member of Academic Committee for Inst. of Natural Sciences, Cankaya University, 2017-2019
- Member of Academic Committee for College of Engineering, Cankaya University, 2017-2019
- Member of Administration Committee for College of Engineering, Cankaya University, 2017-2019
- Member of Administration Committee for Inst. of Natural Sciences, Cankaya University, 2017-2019
- Department Chair, Computer Eng. Dept., TOBB University, 2008-2015
- Chair of Graduate Programs at Computer Engineering, TOBB University, 2008-2015
- Erasmus (Student Exchange) Program University Coordinator, 2005-2016
- Member of Academic Committee for Inst. of Natural Sciences, TOBB University, 2008-2014
- Member of Academic Committee for College of Engineering, TOBB University, 2007-2015
- Member of Administration Committee for College of Eng., TOBB University, 2005-2015
- Member of Undergrad. Program Dev. Committee, CS Dept., Georgia State Uni., 2002-2004
- Member of Alumni Relations Committee, CS Dept., Georgia State Uni., 2002-2004
- Member of PhD Qualification Exam. Committee, CS Dept., Georgia State Uni., 2003-2004

### **Program Committee Member**

- DATA 2024: International Conf. on Data Science, Technology, and Applications, 2020-present
- WEDA: COMPSAC Symposium on Web, Big Data & Analytics, 2016-present
- IEEE International Workshop on E-Health Systems and Semantic Web (ESAS), 2016-present
- Int. Conf. on Internet of Things, Big Data, and Security (IoTBDs), 2016-present
- Int. Conf. on Knowledge Engineering and Ontology Development (KEOD), 2014-present
- Fifth International Workshop on Semantic Computing for Social Networks (SCSN), 2016
- IEEE Signal Processing and Comm. Apps. Symp. (SIU), 2012-present
- 7th Int. Conf. on Information Security and Cryptology (ISCTURKEY 2014)
- Metadata and Semantics Research Conference (MTSR), 2012-present
- SERVICE COMPUTATION, 2010-present
- IEEE Services Cup 2009
- Int. Workshop on Web Service Composition and Adaptation 2008-2009
- The 4th Int. Conf. on Computer and Information Technology, Wuhan, China, (CIT2004), 2004

## **Editor**

- Editorial Board Member, Journal of AI, Computer Science and Robotics, IntechOpen, 2023-present
- Area-Editor, Cankaya University Journal of Science and Engineering, 2019-present
- Editor-in-Chief, Cankaya University Journal of Science and Engineering, 2017-2019
- Editorial Board Member, Turkish Journal of Electrical Eng. & Computer Sciences, 2010-present
- Editorial Advisory Board Member, Int. Jour. of Informatics Tech., Gazi University, 2009-2012
- Editorial Board Member, Int. Jour. of Knowledge-Based Organizations (IJKBO) (IGI Global), 2010-2018

## **Reviewer**

- Elsevier Knowledge-Based Systems, Elsevier Information Processing & Management, Elsevier Expert System with Applications, IEEE Internet of Things Journal, IEEE Access, Wiley Concurrency and Computation: Practice and Experience , Wiley Expert Systems, MDPI Electronics, Journal of Ambient Intelligence and Humanized Computing, Turkish Journal of Electrical Eng. and Computer Sci, ...

## **Project Reviewer**

- The Scientific and Technological Research Council of Turkey (TUBITAK) R&D Programs and Panels, 2005-present
- The Ministry of Industry and Technology of Turkey R&D Programs, 2007-present
- European Union Horizon 2020 Programs

## **Recent Talks**

- “Addressing the Skills Gap and Talent Shortage”, Digital CxO Summit, Sep 13th, 2023.
- “Digital Transformation and Education”, Cankaya Modern Technologies Meeting, May 30th, 2019.
- “Big Data Revolution”, Cankaya University, Nov 6th, 2018.
- “Open Semantic Data”, Open Data National Conference, Ankara, May 23rd, 2017
- “MapReduce Design Patterns for Big Data”, 4th Cloud Computing and Big Data Fall School, TUBITAK BILGEM B3Lab, Nov 24th, 2016
- “Applications of Big Data in Government”, KAMUBIB - Turkish Informatics Assoc., May 22nd, 2016
- “Linked (Big) Data”, Ankara Data Science and Big Data Meetup, Apr 1st, 2016
- “Big Data”, ACM Student Chapter @TOBBETU, Feb 24th, 2016
- “Semantic Web and Linked Data”, Inspiring Talks @Avea R&D Center (Istanbul), Sep 28th, 2015
- “Linked Data as a Reference Knowledge Resource for Question Answering and Information Extraction”, MOD-SIMMER - Computational Ontology Lab, Middle East Technical University, May 15th, 2015
- “Semantic Web”, Idea Technology R&D Center (Istanbul), Jun 24th, 2014