

## Assoc. Prof. MURAT CAN GANIZ

### Personal Information

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### Biography

Dr. Ganiz received his B.S. and M.S. in Computer Engineering from Selçuk University in 2000 and 2002 respectively. Following this he attained a Ph.D. degree in Computer Science from Lehigh University in U.S.A. in January 2008. He worked as a Data Mining Engineer at MySpace in Los Angeles between 2008 and 2009. He started working as an Assistant Professor in Dogus University in Fall 2009 and he joined Marmara University Computer Engineering Department in Fall 2015 where he is currently working as Associate Professor. Dr. Ganiz's research interests are in the general umbrella of Artificial Intelligence, more specifically Machine Learning and Deep Learning algorithms applied to the analysis of textual data and linked data.

### Education Information

Doctorate, Lehigh University, Computer Science, Computer Science, United States Of America 2003 - 2008

Postgraduate, Selçuk Üniversitesi, Fen Bilimleri Enstitüsü, Bilgisayar Mühendisliği (YI) (Tezli), Turkey 2000 - 2002

Undergraduate, Selçuk Üniversitesi, Mühendislik Fakültesi, Bilgisayar Mühendisliği Bölümü, Turkey 1996 - 2000

### Foreign Languages

English, C1 Advanced

### Dissertations

Doctorate, Higher-order path analysis for supervised machine learning, Lehigh University, Computer Science, 2008

Postgraduate, Üniversite akademik bilgi sistemi ve uygulaması, Selçuk Üniversitesi, Fen Bilimleri Enstitüsü, Bilgisayar Mühendisliği (YI) (Tezli), 2002

### Research Areas

Computer Sciences, Artificial Intelligence, Computer Learning and Pattern Recognition, Knowledge Engineering, Computer Learning, Natural Language Processing, Text/Document Processing, Neural Networks

### Academic Titles / Tasks

Assistant Professor, Marmara University, Faculty Of Engineering, Computer Engineering, 2015 - Continues

## Academic and Administrative Experience

Doğuř Üniversitesi, Mühendislik Fakültesi, Bilgisayar Mühendisliđi Bölümü, 2011 - 2012

## Courses

Natural Language Processing, Doctorate, 2021 - 2022

Introduction to Data Science and Analytics, Undergraduate, 2020 - 2021

Object Oriented Software Design, Undergraduate, 2021 - 2022

## Advising Theses

Ganiz M. C. , Combination Of Word Embeddings, Postgraduate, S.DEĐİRMENÇİ(Student), 2019

Ganiz M. C. , ÇİZGELERDE ETİKET YAYILIMI İLE BELGELERİN YARIEĐİTİMLİ SINIFLANDIRILMASI, Postgraduate, G.KOCAMAN(Student), 2019

GANİZ M. C. , Semi-supervised classification of documents via label propagation in graphs, Postgraduate, G.Kocaman(Student), 2019

GANİZ M. C. , Corpus-based semantic kernels for supervised and semi-supervised text classification, Doctorate, A.BERNA(Student), 2016

GANİZ M. C. , MEANING BASED FEATURE SELECTION METHODS FOR TEXT CLASSIFICATION, Postgraduate, M.TUTKAN(Student), 2015

GANİZ M. C. , EMPIRICAL COMPARISON OF NAİVE BAYES EVENT MODELS AND SMOOTHING METHODS FOR TEXT CLASSIFICATION, Postgraduate, Z.HİLAL(Student), 2013

Ganiz M. C. , Wikipedia based Semantic Smoothing for Twitter Sentiment Classification, Postgraduate, D.Torunođlu(Student), 2013

Ganiz M. C. , Uykan Z., Efficiency of Graph Clustering Algorithms GADIA and N-GAIR in Community Detection on Social Networks, Postgraduate, H.Burak(Student), 2013

GANİZ M. C. , HIGHER-ORDER SEMANTIC SMOOTHING FOR TEXT CLASSIFICATION, Postgraduate, M.POYRAZ(Student), 2013

GANİZ M. C. , SENTIMENT ANALYSIS ON TURKISH PRODUCT REVIEWS, Postgraduate, E.ÇAKIRMAN(Student), 2013

## Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- I. **Word sense disambiguation using semantic kernels with class-based term values**  
Altinel B., GANİZ M. C. , Sipal B., Erkaya E., Yucedag O. C. , Dogan M. A.  
TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, vol.27, no.4, pp.3180-3194, 2019  
(Journal Indexed in SCI)
- II. **Semantic text classification: A survey of past and recent advances**  
Altinel B., GANİZ M. C.  
INFORMATION PROCESSING & MANAGEMENT, vol.54, no.6, pp.1129-1153, 2018 (Journal Indexed in SCI)
- III. **Instance labeling in semi-supervised learning with meaning values of words**  
Altinel B., GANİZ M. C. , DİRİ B.  
ENGINEERING APPLICATIONS OF ARTIFICIAL INTELLIGENCE, vol.62, pp.152-163, 2017 (Journal Indexed in SCI)
- IV. **A new hybrid semi-supervised algorithm for text classification with class-based semantics**  
Altinel B., GANİZ M. C.  
KNOWLEDGE-BASED SYSTEMS, vol.108, pp.50-64, 2016 (Journal Indexed in SCI)

- V. **Helmholtz principle based supervised and unsupervised feature selection methods for text mining**  
Tutkan M., GANİZ M. C. , AKYOKUŞ S.  
INFORMATION PROCESSING & MANAGEMENT, vol.52, no.5, pp.885-910, 2016 (Journal Indexed in SCI)
- VI. **Higher-Order Smoothing: A Novel Semantic Smoothing Method for Text Classification**  
Poyraz M., Kilimci Z. H. , Ganiz M. C.  
JOURNAL OF COMPUTER SCIENCE AND TECHNOLOGY, vol.29, no.3, pp.376-391, 2014 (Journal Indexed in SCI)
- VII. **The Benchmark of Paragraph and Sentence Extraction Summaries using Outlier Document Filtering based Multi -Document Summarizer**  
Turan M., Sonmez C., Ganiz M. C.  
INFORMATION TECHNOLOGY AND CONTROL, vol.43, no.4, pp.433-439, 2014 (Journal Indexed in SCI)
- VIII. **Higher Order Naive Bayes: A Novel Non-IID Approach to Text Classification**  
Ganiz M. C. , George C., Pottenger W. M.  
IEEE TRANSACTIONS ON KNOWLEDGE AND DATA ENGINEERING, vol.23, no.7, pp.1022-1034, 2011 (Journal Indexed in SCI)

### Articles Published in Other Journals

- I. **Identifying Topic-based Opinion Leaders in Social Networks by Content and User Information**  
ALTINEL A. B. , HAKKOZ M. A. , BOZDAĞ E. B. , GANİZ M. C.  
International Journal of Intelligent Systems and Applications in Engineering, vol.8, no.4, pp.214-220, 2020  
(Refereed Journals of Other Institutions)

### Refereed Congress / Symposium Publications in Proceedings

- I. **A Simple Data Augmentation Method to Improve the Performance of Named Entity Recognition Models in Medical Domain**  
Issifu A. M. , GANİZ M. C.  
2021 6th International Conference on Computer Science and Engineering (UBMK), Ankara, Turkey, 15 September - 17 November 2021, pp.763-768
- II. **Descriptive and Prescriptive Analysis of Construction Site Incidents Using Decision Tree Classification and Association Rule Mining**  
uğur ö., ARISOY A. A. , GANİZ M. C. , bolaç b.  
2021 International Conference on INnovations in Intelligent SysTems and Applications (INISTA), Kocaeli, Turkey, 25 August 2021, pp.1-6
- III. **Log and Execution Trace Analytics System**  
Abbasli N., GANİZ M. C.  
2021 International Conference on INnovations in Intelligent SysTems and Applications (INISTA), Kocaeli, Turkey, 25 August 2021, pp.1-7
- IV. **A new cluster-aware regularization of neural networks**  
Kalaycı T. A. , Asan U., GANİZ M. C. , Gerek A.  
International Conference on Intelligent and Fuzzy Systems, INFUS 2019, İstanbul, Turkey, 23 - 25 July 2019, vol.1029, pp.346-353
- V. **Combining Lexical and Semantic Similarity Methods for News Article Matching**  
Şen M. U. , Erdiñç H. Y. , Yavuzalp B., GANİZ M. C.  
International Data Science Conference (iDSC 2019), Austria, 13 - 14 May 2019, pp.29-35
- VI. **Diffused Label Propagation based Transductive Classification Algorithm for Word Sense Disambiguation**  
KOCAMAN G., ŞİPAL B., AYDIN G., ALTINEL A. B. , GANİZ M. C.  
In 2019 IEEE International Symposium on INnovations in Intelligent SysTems and Applications, 3 - 05 July 2019,

pp.1-6

- VII. **Effects of Positivization on the Paragraph Vector Model**  
Gerek A., Yuney M. C. , Erkaya E., GANİZ M. C.  
2019 IEEE International Symposium on INnovations in Intelligent SysTems and Applications, INISTA 2019, Sofija, Bulgaria, 3 - 05 July 2019
- VIII. **Waste Not: Meta-Embedding of Word and Context Vectors**  
Değirmenci S., Gerek A., GANİZ M. C.  
24th International Conference on Application of Natural Language to Information Systems, NLDB 2019, Salford, United Kingdom, 26 - 28 June 2019, pp.393-401
- IX. **Document Embedding based Supervised Methods for Turkish Text Classification**  
Celenli H. I. , Ozturk S. T. , Sahin G., Gerek A., GANİZ M. C.  
3rd International Conference on Computer Science and Engineering (UBMK), Sarajevo, Bosnia And Herzegovina, 20 - 23 September 2018, pp.477-482
- X. **Improving Twitter Sentiment Classification Using Term Usage and User Based Attributes**  
AKYOKUŞ S., GANİZ M. C. , Gümüş C.  
IMMM 2017 : The Seventh International Conference on Advances in Information Mining and Management, Venedik, Italy, 25 - 29 June 2017, pp.47-51
- XI. **A Machine Learning Approach to Database Failure Prediction**  
Karakurt I., Ozer S., Ulusinan T., GANİZ M. C.  
2017 International Conference on Computer Science and Engineering (UBMK), Antalya, Turkey, 5 - 08 October 2017, pp.1030-1035
- XII. **Machine Learning Based Electricity Demand Forecasting**  
Camurdan Z., GANİZ M. C.  
2017 International Conference on Computer Science and Engineering (UBMK), Antalya, Turkey, 5 - 08 October 2017, pp.412-417
- XIII. **Preprocessing Framework for Twitter Bot Detection**  
Kantepe M., GANİZ M. C.  
2017 International Conference on Computer Science and Engineering (UBMK), Antalya, Turkey, 5 - 08 October 2017, pp.630-634
- XIV. **A Feature Based Simple Machine Learning Approach with Word Embeddings to Named Entity Recognition on Tweets**  
Taspinar M., GANİZ M. C. , ACARMAN T.  
22nd International Conference on Applications of Natural Language to Information Systems (NLDB), Liege, Belgium, 21 - 23 June 2017, vol.10260, pp.254-259
- XV. **Semi-Supervised Learning using Higher-Order Co-occurrence Paths to Overcome the Complexity of Data Representation**  
GANİZ M. C.  
IEEE International Conference on Systems, Man, and Cybernetics (SMC), Budapest, Hungary, 9 - 12 October 2016, pp.2242-2247
- XVI. **Evaluation of Classification Models for Language Processing**  
Kilimci Z. H. , Ganiz M. C.  
International Symposium on Innovations in Intelligent SysTems and Applications (INISTA 2015), Madrid, Spain, 2 - 04 September 2015, pp.454-461
- XVII. **A Novel Classifier Based on Meaning for Text Classification**  
Ganiz M. C. , Tutkan M., Akyokus S.  
International Symposium on Innovations in Intelligent SysTems and Applications (INISTA 2015), Madrid, Spain, 2 - 04 September 2015, pp.462-466
- XVIII. **Metin Sınıflandırma için Eğitimsiz bir Anlamsal Özellik Seçimi Yöntemi**  
TUTKAN M., GANİZ M. C. , AKYOKUŞ S.  
Elektrik – Elektronik – Bilgisayar ve Biyomedikal Mühendisliği Sempozyumu (ELECO 2014), Turkey, 27 - 29 November 2014

- XIX. **Metin Sınıflandırma için Yeni Bir Eğitilmiş Anlamsal Özellik Seçimi Yöntemi**  
MELİKE T., GANİZ M. C. , AKYOKUŞ S.  
Akıllı Sistemlerde Yenilikler ve Uygulamalar Sempozyumu (ASYU 2014), Turkey, 9 - 10 October 2014
- XX. **A Simple Semantic Kernel Approach for SVM using Higher Order Paths**  
ALTINEL A. B. , GANİZ M. C. , DİRİ B.  
INISTA 2014, 23 - 25 June 2014, pp.431-435
- XXI. **A Simple Semantic Kernel Approach for SVM using Higher-Order Paths**  
Altinel B., Ganiz M. C. , Diri B.  
IEEE International Symposium on Innovations in Intelligent Systems and Applications (INISTA), Alberobello, Italy, 23 - 25 June 2014, pp.431-436
- XXII. **A Semantic Kernel for Text Classification Based on Iterative Higher Order Relations between Words and Documents**  
ALTINEL A. B. , GANİZ M. C. , DİRİ B.  
The 13th International Conference on Artificial Intelligence and Soft Computing, 1 - 05 June 2014, vol.8467, pp.505-517
- XXIII. **A Semantic Kernel for Text Classification Based on Iterative Higher Order Relations between Words and Documents**  
ALTINEL A. B. , GANİZ M. C. , DİRİ B.  
The 13th International Conference on Artificial Intelligence and Soft Computing (ICAISC 2014), 1 - 05 June 2014
- XXIV. **A Novel Higher order Semantic Kernel**  
ALTINEL A. B. , GANİZ M. C. , DİRİ B.  
10th International Conference on Electronics Computer and Computation (ICECCO 2013), 7 - 09 November 2013
- XXV. **A Novel Higher Order Semantic Kernel for Text Classification**  
ALTINEL A. B. , GANİZ M. C. , DİRİ B.  
ICECCO 2013, 10th International Conference on Electronics, Computer and Computation, 7 - 09 November 2013, pp.216-219
- XXVI. **A Novel Higher-Order Semantic Kernel for Text Classification**  
Altinel B., GANİZ M. C. , Diri B.  
10th International Conference on Electronics, Computer and Computation (ICECCO), Ankara, Turkey, 7 - 09 November 2013, pp.216-219
- XXVII. **NMF based Dimension Reduction Methods for Turkish Text Clustering**  
Guran A., Ganiz M. C. , Naiboglu H. S. , Kaptikacti H. O.  
IEEE International Symposium on INnovations in Intelligent SysTems and Applications (INISTA), Bulgaria, 19 - 21 June 2013
- XXVIII. **An Application of Community Discovery in Academical Social Networks**  
Arslan E., Akyokus S., Ganiz M. C.  
IEEE International Symposium on INnovations in Intelligent SysTems and Applications (INISTA), Bulgaria, 19 - 21 June 2013
- XXIX. **Wikipedia Based Semantic Smoothing for Twitter Sentiment Classification**  
Torunoglu D., Telsereen G., Sagturk O., Ganiz M. C.  
IEEE International Symposium on INnovations in Intelligent SysTems and Applications (INISTA), Bulgaria, 19 - 21 June 2013
- XXX. **Exploiting Turkish Wikipedia as a Semantic Resource for Text Classification**  
Poyraz M., GANİZ M. C. , AKYOKUŞ S., Görener B., KİLİMCİ Z. H.  
International Symposium on INnovations in Intelligent SysTems and Applications (INISTA 2012), 2 - 04 July 2012
- XXXI. **A Novel Semantic Smoothing Method based on Higher Order Paths for Text Classification**  
Poyraz M., Kilimci Z. H. , Ganiz M. C.  
12th IEEE International Conference on Data Mining (ICDM), Brussels, Belgium, 10 - 13 December 2012, pp.615-624
- XXXII. **Discrete-Time Hopfield Neural Network Based Text Clustering Algorithm**  
Uykan Z., Ganiz M. C. , Sahinli C.

19th International Conference on Neural Information Processing (ICONIP), Doha, Qatar, 11 - 15 November 2012, vol.7663, pp.551-559

**XXXIII. Application of the SpecHybrid Algorithm to Text Document Clustering Problem**

UYKAN Z., GANİZ M. C.

International Symposium on INnovations in Intelligent SysTems and Applications (INISTA 2011), 15 - 18 June 2011

**XXXIV. An Anomaly Detection Framework for BGP**

Inigo Ortiz d. U. C. , Erkan K., GANİZ M. C.

International Symposium on INnovations in Intelligent SysTems and Applications (INISTA 2011), 15 - 18 June 2011

**XXXV. Intelligent focused crawler learning which links to crawl**

TAYLAN D., POYRAZ M., AKYOKUŞ S., GANİZ M. C.

Innovations in Intelligent Systems and Applications (INISTA 2011), 15 - 18 June 2011

**XXXVI. Analysis of Preprocessing Methods on Classification of Turkish Texts**

dilara t., Çakırman E., GANİZ M. C. , AKYOKUŞ S., Gürbüz Z.

International Symposium on INnovations in Intelligent SysTems and Applications (INISTA 2011), 15 - 18 June 2011

**XXXVII. Leveraging Higher Order Dependencies between Features for Text Classification**

Ganiz M. C. , Lytkin N. I. , Pottenger W. M.

Joint European Conference on Machine Learning (ECML)/European Conference on Principles and Practice of Knowledge Discovery in Databases (PKDD), Bled, Slovenia, 7 - 11 September 2009, vol.5781, pp.375-377

**XXXVIII. Mining Higher Order Association Rules from Distributed Named Entity Databases**

Li S., Janneck C., Belapurkar A., GANİZ M. C. , Yang X., Dilsizian M., Wu T., Bright J., Pottenger W.

IEEE Intelligence and Security Informatics (ISI 2007), 23 - 25 May 2007

**XXXIX. Link Analysis of Higher Order Paths in Supervised Learning Datasets**

GANİZ M. C. , Yang X., Pottenger W. M.

In Proceedings of the Workshop on Link Analysis, Counterterrorism and Security, 2006 SIAM Conference on Data Mining, 01 April 2006

**XL. Detection of interdomain routing anomalies based on higher-order path analysis**

Ganiz M. C. , Kanitkar S., Chuah M. C. , Pottenger W. M.

6th IEEE International Conference on Data Mining, Hong Kong, PEOPLES R CHINA, 18 - 22 December 2006, pp.874-879

## Supported Projects

Altinel Girgin A. B. , Ganiz M. C. , TUBITAK Project, Metin Sınıflandırması için Semantik Gözetimli ve Yarı Gözetimli Kelime Kalıplama Algoritmalarının Geliştirilmesi, 2017 - 2019

Ganiz M. C. , TUBITAK Project, Dil İşlemede Eğitimli Ve Yarı-Eğitimli Sınıflandırma İçin Anlamsal İlişkileri Ortaya Çıkartan Bölüşümlü Kelime Temsili Yöntemlerinin Geliştirilmesi, 2017 - 2019

Ganiz M. C. , TUBITAK Project, "Metinsel Veri Madenciliği için Anlamsal Yarı Eğitimli Algoritmaların Geliştirilmesi", 2012 - 2015

Ganiz M. C. , TUBITAK Project, METİNSEL VERİ MADENCİLİĞİ İÇİN ANLAMSAL YARI EĞİTİMLİ ALGORİTMALARIN GELİŞTİRİLMESİProje NO 111E239, 2012 - 2015

## Memberships / Tasks in Scientific Organizations

IEEE, Principal Member, 2006 - Continues

BILTEG, Executive Board Member, 2019 - 2020, Turkey

ARDEB, Consultant, 2015 - 2019

## Scientific Consultations

ENKA Systems R&D Center, Scientific Consultancy, Marmara University, Faculty Of Engineering, Computer Engineering,  
Turkey, 2020 - Continues

## **Citations**

Total Citations (WOS):249

h-index (WOS):10

## **Entrepreneurship Activities**

Limited, VeriUs Teknoloji ltd sti, 01 June 2013, Partner