

## Assoc. Prof. AHMET ARİF AYDIN

### Personal Information

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### International Researcher IDs

ORCID: 0000-0002-4124-7275

Publons / Web Of Science ResearcherID: K-6184-2019

ScopusID: 56727581600

Yoksis Researcher ID: 262972

### Education Information

Doctorate, University of Colorado at Boulder, Computer Science, United States Of America 2012 - 2016

Postgraduate, University of Colorado at Denver, Computer Science And Engineering , United States Of America 2010 - 2012

Undergraduate, Firat University, Faculty Of Technical Education, Department Of Computer Education, Turkey 2000 - 2005

### Dissertations

Doctorate, Incremental data collection & analytics the design of next-generation crisis informatics software, University of Colorado at Boulder, Computer Science, 2016

Postgraduate, PERFORMANCE BENCHMARKING OF SEQUENTIAL, PARALLEL AND HYBRID RADIX SORT ALGORITHMS AND ANALYZING IMPACT OF SUB VECTORS, CREATED ON EACH LEVEL, ON HYBRID MSD RADIX SORT'S RUNTIME, University of Colorado at Denver, Computer Science And Engineering , 2012

### Research Areas

Computer Sciences, Data Representation and Storage, Database Systems, Software Engineering, Engineering and Technology

### Academic Titles / Tasks

Associate Professor, Inonu University, Mühendislik Fakültesi, Bilgisayar Mühendisliği, 2024 - Continues

Assistant Professor, Inonu University, Mühendislik Fakültesi, Bilgisayar Mühendisliği, 2018 - 2024

Assistant Professor, Inonu University, Mühendislik Fakültesi, Bilgisayar Mühendisliği, 2017 - 2018

Research Assistant, Inonu University, Mühendislik Fakültesi, Bilgisayar Mühendisliği, 2017 - 2017

### Academic and Administrative Experience

Head of Department, Inonu University, Mühendislik Fakültesi, Bilgisayar Mühendisliği, 2021 - Continues  
Deputy Head of Department, Inonu University, Mühendislik Fakültesi, Bilgisayar Mühendisliği, 2018 - 2021  
Head of Department, Inonu University, Mühendislik Fakültesi, Bilgisayar Mühendisliği, 2019 - 2020

## Courses

Büyük Veri Sistemleri, Undergraduate Double Major, 2023-2024  
Veritabanı Yönetim Sistemleri, Undergraduate, 2023-2024  
İngilizce Yazışma, Undergraduate, 2022-2023  
Nesneye Yönelik Yazılım Mühendisliği, Undergraduate, 2022-2023  
Veritabanı Yönetim Sistemleri, Undergraduate, 2022-2023  
Nesneye Yönelik Yazılım Mühendisliği, Undergraduate, 2021-2022  
Big Data Systems , Postgraduate, 2021 - 2022  
Büyük Veri Sistemleri, Undergraduate Double Major, 2021-2022  
NoSQL Veritabanı Yönetim Sistemleri, Undergraduate Double Major, 2021-2022  
Dağıtık Sistemler, Undergraduate, 2021-2022  
Veritabanı Yönetim Sistemleri, Undergraduate, 2021-2022  
Dağıtık Sistemler, Undergraduate, 2020-2021  
Nesneye Yönelik Yazılım Mühendisliği, Undergraduate, 2020-2021  
VERİTABANI YÖNETİM SİSTEMLERİ, Undergraduate, 2020-2021  
BÜYÜK VERİ SİSTEMLERİ, Undergraduate Double Major, 2020-2021  
Yöneylemde Güncel Gelişmeler I, Undergraduate Double Major, 2020-2021  
BÜYÜK VERİ SİSTEMLERİ, Undergraduate Double Major, 2019-2020  
VERİTABANI YÖNETİM SİSTEMLERİ, Undergraduate, 2019-2020  
Programlama Dilleri, Undergraduate, 2017 - 2018  
Veritabanı Yönetim Sistemleri, Undergraduate, 2017 - 2018  
Dağıtık Sistemler, Undergraduate, 2018-2019  
Büyük Veri Sistemleri, Undergraduate Double Major, 2018-2019  
Nesneye Yönelik Yazılım Mühendisliği, Undergraduate, 2018-2019  
NoSQL Veritabanı Sistemleri, Undergraduate Double Major, 2018-2019  
Veritabanı Yönetim Sistemleri, Undergraduate, 2017-2018  
Dağıtık Sistemler, Undergraduate, 2017-2018  
Nesneye Yönelik Yazılım Mühendisliği, Undergraduate, 2017-2018  
Programlama Dilleri, Undergraduate, 2017-2018

## Advising Theses

Aydın A. A., İLİŞKİSEL VERİ TABANLARINDAN NOSQL DEPOLAMA SİSTEMLERİNE GEÇİŞİN KULLANILAN YÖNTEMLERİN İNCELENMESİ VE ŞEMA DÖNÜŞÜM UYGULAMASININ GELİŞTİRİLMESİ, Postgraduate, M.MEHDİ(Student), 2024  
Aydın A. A., APPLICATION AND COMPARISON OF FULL TEXT SEARCH TECHNOLOGIES FOR BIG DATA PROCESSING, Postgraduate, A.DENİZ(Student), 2023  
Aydın A. A., Gerçek zamanlı veri işleme platformu tasarımı (TweetCASP), Postgraduate, T.BERİL(Student), 2022  
Aydın A. A., NESNELERİN İNTERNETİ TEKNOLOJİSİ İLE AKILLI EV KONTROLÜ İÇİN UYGULAMA GELİŞTİRİLMESİ, Postgraduate, H.MEHMET(Student), 2021

## Jury Memberships

Post Graduate, Post Graduate, Fırat Üniversitesi, October, 2022  
Post Graduate, Post Graduate, Fırat Üniversitesi, May, 2022  
Post Graduate, Post Graduate, Fırat Üniversitesi, February, 2022  
Post Graduate, Post Graduate, Fırat Üniversitesi, August, 2021  
Post Graduate, Post Graduate, Fırat Üniversitesi, August, 2021  
Post Graduate, Post Graduate, Fırat Üniversitesi, May, 2021  
Post Graduate, Post Graduate, Fırat Üniversitesi, December, 2020  
Post Graduate, Post Graduate, Fırat Üniversitesi, October, 2020  
Post Graduate, Tez Savunma Jürisi, Fırat Üniversitesi, December, 2018  
Post Graduate, Tez Savunma Jürisi, Fırat Üniversitesi, October, 2018

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

- I. **A novel energy consumption prediction model of electric buses using real-time big data from route, environment, and vehicle parameters**  
Ekici Y. E., Akdağ O., Aydın A. A., Karadağ T.  
IEEE ACCESS, vol.1, no.11, pp.105305-105322, 2023 (SCI-Expanded)
- II. **A Comparative Perspective on Technologies of Big Data Value Chain**  
Aydın A. A.  
IEEE ACCESS, vol.11, pp.112133-112146, 2023 (SCI-Expanded)
- III. **Prominent quality attributes of crisis software systems: a literature review**  
AYDIN A. A.  
TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, vol.28, no.5, pp.2507-2522, 2020 (SCI-Expanded)
- IV. **GETTING THE QUERY RIGHT FOR CRISIS INFORMATICS DESIGN ISSUES FOR WEB-BASED ANALYSIS ENVIRONMENTS**  
BARRENECHEA M., JAMBI S., Aydın A. A., HAKEEM M., ANDERSON K. M.  
JOURNAL OF WEB ENGINEERING, vol.16, pp.399-432, 2017 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Optimization of Proportional-Integral-Derivative Parameters for Speed Control of Squirrel-Cage Motors with Seahorse Optimization**  
Ekici Y. E., Karadağ T., Aydın A. A., Akdağ O.  
Electrica, vol.1, no.1, pp.1-9, 2024 (ESCI)
- II. **Designing a platform for Tweet Collection, Analytics and Storage (TweetCASP)**  
Doğuş T. B., AYDIN A. A.  
Anatolian Science - Bilgisayar Bilimleri Dergisi, pp.165-171, 2023 (Peer-Reviewed Journal)
- III. **Revisiting Probabilistic Relation Analysis: Using Probabilistic Relation Graphs for Relational Similarity Analysis of Words in Short Texts**  
Alnahas D., ATEŞ A., AYDIN A. A., ALAGÖZ B. B.  
Turkish Journal of Mathematics and Computer Science, vol.15, no.2, pp.334-354, 2023 (Peer-Reviewed Journal)
- IV. **A comparison of Apache Solr and Elasticsearch technologies in support of large-scale data analysis**  
Deniz A., ELÖMER M. M., AYDIN A. A.  
Gümüşhane Üniversitesi Fen Bilimleri Dergisi, vol.13, no.2, pp.386-404, 2023 (Peer-Reviewed Journal)
- V. **Real-Time Big Data Processing and Analytics: Concepts, Technologies, and Domains**  
KEKEVİ U., AYDIN A. A.  
Anatolian Science - Bilgisayar Bilimleri Dergisi, vol.7, no.2, pp.111-123, 2022 (Peer-Reviewed Journal)
- VI. **Alternative CPU and GPU Parallel Computing Approaches for Improving Sequential Analysis of**

### **Probability Associations in Short Texts**

Alnahas D., AYDIN A. A.

Balkan Journal of Electrical and Computer Engineering, vol.10, no.4, pp.419-428, 2022 (Peer-Reviewed Journal)

### **VII. Data modelling for large-scale social media analytics: design challenges and lessons learned**

AYDIN A. A., Anderson K. M.

International Journal of Data Mining, Modelling and Management, vol.12, no.4, pp.386-414, 2020 (ESCI)

## **Books & Book Chapters**

### **I. Driving Range Problem in Electric Vehicles and Methods to Increase**

EKİCİ Y. E., KARADAĞ T., AYDIN A. A., AKDAĞ O.

in: Article and Reviews in Engineering Sciences, , Editor, Platanus Publishing, Ankara, pp.253-286, 2024

## **Refereed Congress / Symposium Publications in Proceedings**

### **I. Impact of Outside Temperature on Driving Range and Energy Consumption Using Real-Time Big Data for Electric Buses**

Ekici Y. E., Karadağ T., Aydın A. A., Akdağ O.

8th International Artificial Intelligence and Data Processing Symposium (IDAP'24), Sep, 21-22, 2024, Malatya, Türkiye, Malatya, Turkey, 21 - 22 September 2024, pp.1-8

### **II. A Novel CAD Framework with Visual and Textual Interpretability: Multimodal Insights for Predicting Respiratory Diseases**

Mukhlis R., Saleem S., Kwon H., Hussain J., AYDIN A. A., Al-Antari M. A.

2024 8th International Artificial Intelligence and Data Processing Symposium (IDAP), Malatya, Turkey, 21 September 2024, pp.1-5

### **III. A Novel Attention-based Explainable Deep Learning Framework Towards Medical Image Classification**

Muoka G. W., Yi D., Ukwuoma C. C., Martin M. D., AYDIN A. A., Al-Antari M. A.

2023 7th International Symposium on Innovative Approaches in Smart Technologies (ISAS), İstanbul, Turkey, 23 November 2023

### **IV. REVIEW AND ANALYSIS OF REAL TIME BIG DATA OF ELECTRIC BUS CONSUMPTION DATA AND OPTIMUM INTEGRATION INTO THE URBAN TRANSPORTATION ROUTES**

EKİCİ Y. E., AKDAĞ O., AYDIN A. A., KARADAĞ T.

ANKARA INTERNATIONAL CONGRESS ON SCIENTIFIC RESEARCH-VII, Ankara, Turkey, 02 December 2022, pp.1405-1418

### **V. IoT Based Mobile Smart Home Surveillance Application**

Erzi H. M., AYDIN A. A.

2020 4th International Symposium on Multidisciplinary Studies and Innovative Technologies (ISMSIT), Istanbul, Turkey, Turkey, 22 - 24 October 2020, pp.1-5

### **VI. CAP-based Examination of Popular NoSQL Database Technologies in Streaming Data Processing Akan Veri Islemede Populer NoSQL Veritabanı Teknolojilerinin CAP Tabanlı İncelenmesi**

Doguc T. B., Aydın A. A.

2019 International Conference on Artificial Intelligence and Data Processing Symposium, IDAP 2019, Malatya, Turkey, 21 - 22 September 2019

### **VII. Batch to real-time: Incremental data collection & analytics platform**

AYDIN A. A., ANDERSON K. M.

50th Hawaii International Conference on System Sciences (HICCS), Hawaii, United States Of America, 4 - 07 January 2017, pp.5911-5920

### **VIII. An Overview of Quality Attributes for Data Intensive Systems in Crisis Informatics**

AYDIN A. A.

2017 International Artificial Intelligence and Data Processing Symposium (IDAP), Malatya, Turkey, 16 - 17 September 2017

- IX. **Design Challenges/Solutions for Environments Supporting the Analysis of Social Media Data in Crisis Informatics Research**  
ANDERSON K. M., Aydin A. A., BARRENECHEA M., CARDENAS A., HAKEEM M., JAMBI S.  
48th Annual Hawaii International Conference on System Sciences (HICSS), Hawaii, United States Of America, 5 - 08 January 2015, pp.163-172
- X. **Getting the Query Right: User Interface Design of Analysis Platforms for Crisis Research**  
BARRENECHEA M., ANDERSON K. M., Aydin A. A., HAKEEM M., JAMBI S.  
15th International Conference on Web Engineering (ICWE), Rotterdam, Netherlands, 23 - 25 June 2015, vol.9114, pp.547-564
- XI. **Incremental Sorting for Large Dynamic Data Sets**  
Aydin A. A., ANDERSON K. M.  
1st IEEE International Conference on Big Data Computing Service and Applications (BigDataService), San-Francisco, Costa Rica, 30 March - 03 April 2015, pp.170-175
- XII. **Sequential and parallel hybrid approach for non-recursive most significant digit radix sort**  
AYDIN A. A., Alaghband G.  
10th Int. Conf. on Applied Computing, Fort Worth, United States Of America, 23 - 25 October 2013, pp.51-58
- XIII. **Performance Benchmarking of Sequential, Parallel and Hybrid Radix Sort Algorithms and Analyzing Impact of Sub vectors, Created on each level, on Hybrid MSD Radix Sort's Runtime**  
AYDIN A. A., Alaghband G.  
Research and Creative Activities Symposium 2012, 27 April 2012

## Other Publications

- I. **Performance Benchmarking of Sequential, Parallel and Hybrid Radix Sort Algorithms and Analyzing Impact of Sub vectors, Created on each level, on Hybrid MSD Radix Sort's Runtime**  
AYDIN A. A., Alaghband G.  
Presentation, pp.40, 2012

## Supported Projects

GÜL E., AYDIN A. A., Project Supported by Higher Education Institutions, Derin Öğrenme ve Sosyal Medya Verileri Aracılığıyla Kentsel Taşkın Mekanizmalarını Anlamaya Yönelik Yeni Bir Yaklaşım, 2024 - Continues

KARADAĞ T., EKİCİ Y. E., AYDIN A. A., Project Supported by Higher Education Institutions, Elektrikli Araçlarda Menzil Artışına Yönelik Yapay Zeka Tabanlı Sürdürülebilir Ulaşım Modelinin Geliştirilmesi Optimizasyonu ve Analizi, 2023 - Continues

Aydin A. A., TÜBİTAK International Bilateral Joint Cooperation Program Project, MRI Görüntülerinde Lomber Spinal Stenoz Tahmini İçin Açıklanabilir Hibrit Yapay Zeka İş Akışı, 2023 - 2026

AYDIN A. A., BİÇİCİ M. B., Project Supported by Higher Education Institutions, Reklam gelir kaynaklı şehir içi veri toplama projesi, 2019 - 2020

## Scientific Refereeing

Uluslararası Batı Karadeniz Mühendislik ve Fen Bilimleri Dergisi, Other Indexed Journal, January 2021

European Journal of Science and Technology, Other Indexed Journal, December 2020

Academic Platform Journal of Engineering and Science, Other Indexed Journal, July 2020

Journal of Computer Science, Other journals, July 2020

Academic Platform Journal of Engineering and Science, Other Indexed Journal, July 2020

Gümüşhane University Journal of Science and Technology Institute, Other Indexed Journal, July 2020

Academic Platform Journal of Engineering and Science, Other Indexed Journal, July 2020

Journal of Computer Science, Other Journals, March 2019

Journal of Computer Science, Other journals, November 2018

Journal of Computer Science, Other journals, February 2018

## **Metrics**

Publication: 26

Citation (WoS): 18

Citation (Scopus): 24

H-Index (WoS): 2

H-Index (Scopus): 3

## **Congress and Symposium Activities**

International Conference on Artificial Intelligence and Data Processing, Session Moderator, Malatya, Turkey, 2019

International Conference on Artificial Intelligence and Data Processing, Attendee, Malatya, Turkey, 2019

International Conference on Artificial Intelligence and Data Processing, Session Moderator, Malatya, Turkey, 2018

International Conference on Artificial Intelligence and Data Processing, Attendee, Turkey, 2018

International Conference on Artificial Intelligence and Data Processing, Attendee, Turkey, 2017

International Conference on Artificial Intelligence and Data Processing, Session Moderator, Malatya, Turkey, 2017

2015 IEEE First International Conference on Big Data Computing Service and Applications, Attendee, California, United States Of America, 2015

10th Int. Conf. on Applied Computing IADIS, Attendee, Texas, United States Of America, 2013

## **Non Academic Experience**

University of Colorado Boulder

MİLLİ EĞİTİM BAKANLIĞI