

Erchan Aptoula

Computer scientist

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I work on image analysis and computer vision. My areas of activity are primarily **color, multi-, hyper-spectral image analysis**, as well as vision based industrial inspection. I have experience with remote sensing, precision agriculture, automotive, and microscopy related applications.

Professional Experience

- Sep 2022 – now **Sabanci University, Istanbul, Türkiye**
Associate Professor at the Faculty of Engineering and Natural Sciences (CS program)
Affiliated with the VPA lab (www.vpalab.com)
- Jun 2019 – Aug 2022 **Gebze Technical University, Kocaeli, Türkiye**
Professor at the Institute of Information Technologies
- Jun 2016 – May 2019 **Gebze Technical University, Kocaeli, Türkiye**
Associate Professor at the Institute of Information Technologies
- Apr 2014 – May 2016 **Okan University, Istanbul, Türkiye**
Associate Professor at the Computer Engineering department
Erasmus Coordinator of the Computer Engineering department
Board member of the Computer Research and Application Center
- Sep 2010 – Mar 2014 **Okan University, Istanbul, Türkiye**
Assistant Professor at the Computer Engineering department

Academic Formation

- Nov 2005 – Jul 2008 **Strasbourg University I, Strasbourg, France**
PhD in Computer Science (*Received a regional award from SAUIAS, France*)
Thesis title: Morphological color image analysis applied to content-based image description, annotation and retrieval
- Sep 2004 – Jul 2005 **Strasbourg University I, Strasbourg, France**
MSc in Computer Science (*Under an excellence scholarship*)
Thesis title: Mathematical morphology and the segmentation of multi-spectral astronomical images
- Sep 1999 – Jul 2004 **Galatasaray University, Istanbul, Türkiye**
BSc in Computer Engineering (*Ranked 1st in the Faculty of Engineering*)

Research

Interests

Digital Image Analysis – Deep learning, domain adaptation, semi-supervised learning, mathematical morphology, content description, semantic segmentation, object detection.

Publications & Citations

Complete list: sites.google.com/view/erchan-aptoula/publications
Google Scholar: scholar.google.com/citations?user=JZ7dO1UAAAAJ
Publons: publons.com/researcher/3421652/erchan-aptoula/
Researchgate: www.researchgate.net/profile/Erchan_Aptoula

Talks, Seminars, Invited research, etc

School of Computer Science, University of Lincoln, UK, 2022
Sensing Anywhere (EU H2020 Marie Curie ITN, Siegen University, Germany), 2022
Summer School on Data Science (VBYO), Sabanci University, 2019
Summer School on Earth Observation Applications (UYGU), GTÜ, 2018
Multivariate Signal Analysis for Remote Sensing Applications, Brasov, Romania, 2017
Scottish Marine Science Academy, Oban, UK, May, 2016
Research visit, IRISA Laboratory, Vannes, France, 2016
Scottish Marine Science Academy, Oban, UK, July, 2015
International School on Image Processing, Brasov, Romania, July, 2013
Research visit, University of Brittany, France, June, 2013
South Brittany University, France, January, 2013
Sabanci University, Türkiye, April, 2012
South Brittany University, France, September, 2011

Projects

Intelligent Public Safety Platform for Smart Cities, 2021-2024

Researcher – funded by: TUBITAK 2556 (Collaboration with Havelsan, Turkcell, Hyperion, IstLink, Tazi, Özyeğin Univ., Texas A&M Univ., Hamad Bin Khalifa Univ. and Informatica Qatar)

MULTI-variate, temporal, resolution and SourCe remote sensing image Analysis and Learning (MULTISCALE), 2019-2022

Principal Investigator – funded by: TUBITAK 2545 (Collaboration with Istanbul Technical University, Université de Bretagne Sud and Universite de Rennes 2)

Branding of Bingol honey through DNA barcoding

Researcher – Funded by Bingol University (Collaboration with Bingol University)

Real-time night-time vehicle detection and recognition for adaptive matrix headlights

Researcher – Farba/Odelo, Bursa

Deeply learned attribute profiles for the classification of remote sensing images, 2018-2020

Principal Investigator – funded by: TUBITAK 1001 (Collaboration with Samsun OMÜ)

Content based description and retrieval of hyperspectral remote sensing images, 2016-2018

Principal Investigator – funded by: TUBITAK 1001

Melt pond on sea ice detection from synthetic-aperture radar images, 2015

Researcher – Scottish Association for Marine Science, UK

Content-based plant retrieval, 2014-2016

Researcher – A collaboration with Sabanci Univ., funded by: TUBITAK 1001

Hyperspectral remote sensing data description through multivariate mathematical morphology, 2013-2016

Principal Investigator – funded by: TUBITAK 3501

Hydraulic Steering System Design for Semi-Trailers, 2013

Researcher – TIRSAN, Sakarya

The Okan Autonomous Vehicle Project, 2010-2011

Researcher – Okan University

Teaching

Lectures

Computer Vision
Data structures and algorithms
Digital image processing
Introduction to computer programming
Numerical analysis
Object oriented analysis and design
Object-oriented programming
Pattern recognition
Programming languages and applications
Scientific research methods
System programming

Supervision

Selçuk İlhan Aydı, MSc, Full reference image quality assessment, 2022

Şeydanur Ekinci, MSc, Weed and crop classification with deep learning for precision agriculture, 2022

Melike İlteralp, MSc, Deep learning applied to remote sensing image sequence analysis, 2022

Hatice K. Teloğlu, MSc, Multitemporal remote sensing image analysis with deep learning, 2022

Merve Bozo, MSc, Crop classification from multispectral time series, 2021 (joint supervision with Z. Çataltepe)

Özgü Göksu, MSc, Content based retrieval of remote sensing images, 2020

Yavuz Kömeçoğlu, MSc, Remote sensing image classification with deep learning, 2018

Murat Can Özdemir, MSc, Remote sensing image classification with deep learning & mathematical morphology, 2016 (joint supervision with B. Yanıkoğlu)

Serkan Sisneloğlu, MSc, Signature authentication with mathematical morphology, 2013

Honors and Awards

2021	Young Scientists Award Program (GEBİP), Turkish Academy of Sciences (TÜBA), Türkiye
2020, 2021	I ranked in the top 2% of the international science-wide author database of standardized citation indicators in terms of career-long impact, prepared by J.Ioannides et al.
2021	Project performance award (Tübitak ARDEB - PPÖ)
2016	2nd place at PlantClef's plant recognition contest (with Sabanci University)
2016	Young Scientist Award (BAGEP), Science Academy (Bilim Akademisi), Istanbul, Türkiye
2013	1st place at ImageClef's scanned plant retrieval track (with Sabanci University)
2012	1st place at ImageClef's plant retrieval track (with Sabanci University)
2011	4 th place at ImageClef's plant retrieval track (with Sabanci University)
2009	My PhD thesis received a regional award from Strasbourg Academy, France
2007	My article entered the Top 25 (18 th) of SciVerse/ScienceDirect
2005	I received a full MSc. scholarship from the French Embassy at Greece
2004	I ranked first at my Faculty at Galatasaray University (3.68/4.00 GPA)
2003	An award from Cisco Systems at a national network project contest

Skills

Computer skills	Java, C/C++, Python
Languages	Turkish (native), Greek (native), English (fluent), French (fluent), Spanish (beginner)

Activities

Associate Editor of the IEEE Transactions on Geoscience and Remote Sensing Journal (2023-2026)

Project referee for KOSGEB, TÜBİTAK, ANR (France).

Reviewer for various IEEE, Elsevier and Springer journals on image processing, computer vision and remote sensing

Program committee member for ALCIP, ISM, SIU, ICMR, CBMI

Organizing member for IEEE SIU'19, UYGU'18, M2GARSS'22

Memberships

Institute of Electrical and Electronics Engineers (IEEE)

Geoscience and Remote Sensing Society (IEEE GRSS)

Turkish Academy of Sciences (TÜBA) – GEBIP member