Curriculum Vitae

Burak Acar, PhD.
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Personal Information

Nationality: Turkish
Date of Birth: October 24, 1972
Place of Birth: İzmir, Turkey

Education

1996 - 2000	Bilkent University , Electrical and Electronics Engineering Department , Ankara, Turkey (Ph.D. in Electrical and Electronics Engineering)
1994 - 1996	Bilkent University, Electrical and Electronics Engineering Department Ankara, Turkey (M.Sc. in Electrical and Electronics Engineering)
1990 - 1994	Bilkent University, Electrical and Electronics Engineering Department, Ankara, Turkey (B.Sc. in Electrical and Electronics Engineering)
1983 – 1990	İzmir Özel Türk Koleji, İzmir, Turkey (High school education)

Work Experience

2020 -	Affiliated faculty member, KUIS AI Lab, Koc University, İstanbul, Turkey
2018 -	Professor at Department of Electrical and Electronics Engineering, Boğaziçi University, İstanbul, Turkey
2009 - 2018	Associate Professor at Department of Electrical and Electronics Engineering, Boğaziçi University, İstanbul, Turkey
2012 - 2013	DFG Mercator Visiting Professor, TU Munich, Faculty of Informatics, CAMP-AR, Garching b. Munich, Germany
2003 - 2009	Assistant Professor at Department of Electrical and Electronics Engineering, Boğaziçi University, İstanbul, Turkey
2000 - 2003	Post-doc research scholar in Radiological Sciences Laboratory, Department of Radiology (Lucas MRS Imaging Center, 3D Medical Imaging Laboratory), Stanford University, California, USA. (Worked on CAD in Virtual Colonoscopy and Diffusion Tensor MR Imaging)
1998 - 1999	Research Fellow in Dept. of Cardiac and Vascular Sciences (*formerly Cardiological Sciences Dept.*), University of London, St. George's Hospital Medical School, London, UK. (Worked on HRV analysis, QT dispersion analysis and T-wave morphology analysis.)
1994 -2000	Teaching/Research Assistant in Electrical & Electronics Engineering Dept., Bilkent University, Ankara, Turkey.

Administrative Positions

2016 -	Head of Boğaziçi University, Electrical & Electronics Eng. Dept., PhD Qualification Exam Committee, Istanbul, Turkey
2016 - 2020	Member of Boğaziçi University, Electrical & Electronics Eng. Dept., Academic Recruitment Committee, Istanbul, Turkey
2015 -	Member of Boğaziçi University,Housing Committee, Istanbul, Turkey
2010 - 2012	Member of Boğaziçi University, Directorate of Social Facilities, Steering Committee, İstanbul, Turkey

2009 - 2018	Member of Boğaziçi University, Faculty of Engineering, Steering Committee (Fakulte Kurulu), İstanbul, Turkey (except 2012-2013)
2007 - 2008	Vice-chair of Department of Electrical and Electronics Engineering, Boğaziçi University, İstanbul, Turkey

Volunteer Positions / Responsibilities

2021 -	Chair of IEEE Signal Processing Society Turkey Chapter
2019-	BUDOTEK TechnoPark scientific evaluation committee member
2018-	Founding co-director of Innovation Research Laboratory (IRL@BOUN) jointly initiated and supported by Bogazici University, SIEMENS Turkey and SIEMENS Healthineers Turkey.
2015-	Academic director of Bogazici University – SIEMENS Healthineers ITT joint Innovation Management & Leadership Certification Programme (IMLEAP), Istanbul, TR

Ph.D. Thesis

New Techniques For Ventricular Repolarization and Heart Rate Variability Analyses
Bilkent University, EE Dept., Ankara, Turkey. March 2000
Supervisor : Prof. Dr. Hayrettin Köymen (Bilkent University, Ankara, Turkey)

M.Sc. Thesis

Online Exercise ECG Signal Orthogonalization Based on Singular Value Decomposition
Bilkent University, EE Dept., Ankara, Turkey. September 1996
Supervisor : Prof. Dr. Hayrettin Köymen (Bilkent University, Ankara, Turkey)

Research interests

Image/Signal Processing/Analysis and Machine Learning Applications towards diagnostics and prognostics in multiple domains, such as medicine, industrial, finance and multimedia.
Current and past projects involve

- Brain Network Models and Graph Analysis for Alzheimer's Disease
- Medical Diagnostics and Prognostics (Liver, Brain, Colon)
- Cancer Biomarkers for Liquid Biopsy
- Medical Ultrasound Simulations
- Industrial machinery health monitoring with IIoT applications
- Industrial diagnostics and prognostics, inc. predictive maintenance and automated quality control

Professional memberships

Senior Member of IEEE
Member of the Chamber of Electrical and Electronics Eng., Turkey
Member of EURASIP
Member (Observer) of ETIP Smart Networks for Energy Transition (SNET) WG4

Projects/Grants

NeurotechEU (The European University of Brain and Technology) –A joint initiative of 8 European Universities, including Bogazici University. VAVlab is one of the participating founder labs from Bogazici University, primarily active in Neurotech2040 (WP3) and Technological Innovation (WP5) workpackages (Horizon 2020): WP5 Co-lead

BRAINet Project Series
B-Tensor - Multi-Layered Brain Connectome Analysis with Application to Alzheimer's Disease (Bogazici University Research Funds, BAP – 16862): Principal Investigator

Composite Network Modeling of Neurological/Psychiatric Disorders and Application to Alzheimer's Disease (TUBITAK-ARDEB 1003 Programme – 114E053): Principal Investigator

FSnet – Structure Guided Functional Brain Network (Bogazici University Research Funds, BAP – 15A02M5): Principal Investigator

Industry 4.0 Projects:

iProbe - Machine Fault Diagnostics and Prognostics (Supported by Arcelik A.S. and Ascenix Inc.): Principal Investigator

CancerFind – Spectrocopic Method and Prototype Development for a Low Cost, Portable Early Stage (Breast) Cancer Detection via Marker Metabolytes (Bogazici University Research Funds, BAP – 16A02P5): Co-Principal Investigator

Past Projects:

KEYSTONE: Semantic Keyword-based Search on Structured Data Sources (COST Action IC1302)

MUSE - Medical Ultrasound Simulator for Education (TUBITAK-TEYDEB 1505 Programme – 5130002): Principal Investigator

CaReRa: Content Based Similar Case Retrieval in Radiology (TUBITAK-ARDEB 1001 Programme – 110E264): Principal Investigator

In Vivo Analysis of Human Muscle Mechanics Using MRI (TUBITAK-ARDEB 1001 Programme – 111E084): Investigator

CBIR4Liver: Content Analysis for Liver Cases (Bogazici University Research Funds, BAP - 5324) : Principal Investigator

SIMILAR Network of Excellence within EU's 6th Framework Programme, WP 10 Medical Applications (FP6-507609): Partner

DTIsuite: DT-MRI Analysis and Visualization Platform (Bogazici University Research Funds, BAP - 07A203) : Principal Investigator

SK/DTIcad: CAD Algorithms for Virtual Colonoscopy and DTI (Bogazici University Research Funds, BAP - 05M106): Principal Investigator

DRESS: Diagnostic Radiology Expert Systems (TUBITAK-ARDEB KARIYER Programme – 104E035): Principal Investigator

Orthodontic Data Analysis-ODA (Bogazici University Research Funds, BAP): Principal Investigator

Virtual Colonoscopy Project, Stanford University, The Clark Center, 3D lab., USA : Scientific Consultant (2004-2008)

Industrial Initiated / (Co)Funded Projects

2021-	PI on "Material Discrimination Using Dual-Energy X-ray Imaging", TUBITAK-BILGEM, Istanbul, TR
2018-	PI on "Machine Diagnostics and Prognostics for Electrical Motors", Arcelik A.S. (Atolye 4.0), Istanbul, TR
2014-2016	Co-investigator, "Non-destructive Optics Based Food Analysis", IDEA A.S., Istanbul,TR
2013-2015	PI on "TVeye: Gesture Control for TV Sets", Arcelik A.S., Istanbul, TR

2012-2015	PI on “MUSE: Medical Ultrasound Simulation for Education”, Net Simulasyon Cihazları. Ltd. Sti. Istanbul, TR (TUBITAK-TEYDEB 1505 Programme – 5130002)
2008-2012	PI on “Digital Video Processing and 3D TV”, Arcelik A.S., Istanbul, TR
2011-2012	Co-investigator on “Stereo Video Quality Assessment”, Digiturk A.S., Istanbul, TR
2009-2011	PI on “viRAD: Virtual Radiology Department (integrated PACS, teleradiology and diagnostic tools) project”, SOLVEKA Ltd Sti, Ankara, TR

Journal publications (*WoS Publons: C-7904-2009 , h-index=17*)

Durusoy G, Yıldırım Z, …., Acar, B. “B-Tensor: Brain Connectome Tensor Factorization for Alzheimer’s Disease”, *IEEE Journal of Biomedical and Health Informatics* (2020), doi: 10.1109/JBHI.2020.3023610

Aydemir G, Acar B. “Anomaly Monitoring Improves Remaining Useful Life Estimation of Industrial Machinery”, *J. Manufacturing Systems*, **56**, 463-469 (July 2020)

Oktay K., Santaliz-Casiano A., Patel M., Marino N., Storniolo A.M.V., Torun H., Acar B., Madak-Erdogan Z. “A Computational Statistics Approach to Evaluate Blood Biomarkers for Breast Cancer Risk Stratification”, *Hormones and Cancer*, **11**, 17-33 (2020) DOI: 10.1007/s12672-019-00372-3

Tuzer M., Yazici A., Turkay R., Boyman, M., Acar B. “MR Based Medical Ultrasound Simulation Without Explicit Speckle Modeling “, *Int. J. Computer Assisted Radiology and Surgery,* **13(7)**, 1009-1017 (2018) DOI: 10.1007/s11548-018-1760-4

Marvasti N.B., Yörük E., Acar B. “Computer-Aided Medical Image Annotation: Preliminary Results with Liver Lesions in CT”, *IEEE J. Biomedical and Health Informatics*, **22(5)**, 1561-1570 (2018) DOI: 10.1109/JBHI.2017.2771211

Roldán-García M. del Mar, Uskudarli S., Marvasti N.B., Acar B., Aldana-Montes J.F. “Towards an Ontology-Driven Clinical Experience Sharing Ecosystem: Demonstration with Liver Cases”, *Expert Systems with Applications,* **101**, 176-195 (2018) DOI: 10.1016/j.eswa.2018.02.001

Spanier A.B., Caplan N., Sosna J., Acar B., Joskowicz L. “A fully automatic end-to-end method for content-based image retrieval of CT scans with similar liver lesion annotations”, *Int. J. Computer Assisted Radiology and Surgery,* **13**, 165–174 (2018) DOI: 10.1007/s11548-017-1687-1

Karakuzu A., Pamuk U., Ozturk C., Acar B.and Yucesoy C.A. “Magnetic resonance and diffusion tensor imaging analyses indicate heterogeneous strains along human medial gastrocnemius fascicles caused by submaximal plantar-flexion activity”, *Journal of Biomechanics,* **57,** 69-78 (2017)

Pamuk U., Karakuzu A., Ozturk C., Acar B.and Yucesoy C.A., “Combined Magnetic Resonance And Diffusion Tensor Imaging Analyses Provide A Powerful Tool For In Vivo Assessment Of Deformation Along Human Muscle Fibers”, *Journal of the Mechanical Behavior of Biomedical Materials*, **63**, 207-219 (2016)

Kokciyan N., Turkay R., Uskudarli S., Yolum P., Bakır B., Acar B, “Semantic Description of Liver CT Images: An Ontological Approach”, *IEEE J. Biomedical and Health Informatics,* **18(4)**, 1363-1369 (2014) DOI: 10.1109/JBHI.2014.2298880

Gürol ÖC, Sankur B, Acar B, Güney M, “Efficient Estimation of Disparity Statistics and their Use as a Predictor for Perceived 3D Video Scene Quality”, *EURASIP Journal on Image and Video Processing*, **53,** (2013), DOI:10.1186/1687-5281-2013-53

Yoldemir B., Acar B., Firat Z., Kilickesmez O., "SMT: A Reliability Based Interactive DTI Tractography Algorithm", *IEEE Transactions on Medical Imaging*, **31(10)**, 1929-1940 (2012), DOI:10.1109/TMI.2012.2210052

Akgul, C.B., D.L. Rubin, S. Napel, C.F. Beaulieu, H. Greenspan, B. Acar, "Content Based Image Retrieval in Radiology:Current Status and Future Directions", *Journal of Digital Imaging*, **24(2)**, 209-222 (2011) DOI: 10.1007/s10278-010-9290-9

Konukoglu E., B. Acar, D.S. Paik, C.F. Beaulieu, J. Rosenberg and S. Napel, "Polyp Enhancing Level Set Evolution of Colon Wall: Method and Pilot Study," *IEEE Transactions on Medical Imaging*, **26(12)**, 1649-1656 (2007)

Konukoglu E. and B. Acar, "HDF: Heat Diffusion Fields for Polyp Detection in CT Colonography," *Signal Processing*, **87(10)**, 2407-2416 (2007)

Li, P., S. Napel, B. Acar, D.S. Paik, R.B. Jeffrey, Jr. and C.F. Beaulieu, "Registration of Central Paths and Colonic Polyps between Supine and Prone Scans in CT Colonography," *Medical Physics*, **31(10)**, 2912-2923 (2004)

Paik, D.S., C.F. Beaulieu, G.D. Rubin, B. Acar, R.B. Jeffrey, Jr., J. Yee, J. Dey and S. Napel, "Surface Normal Overlap: A Computer-Aided Detection Algorithm With Application to Colonic Polyps and Lung Nodules in Helical CT," *IEEE Transactions on Medical Imaging*, **23(6)**, 661-675 (2004)

Liu, C., R. Bammer, B. Acar, and M.E. Moseley, "Characterizing Non-Gaussian Diffusion by Using Generalized Diffusion Tensors," *Magnetic Resonance in Medicine*, **51(5)**, 924-937 (2004)

Bammer, R., M. Markl, A. Barnett, B. Acar, M.T. Alley, N.J. Pelc, G.H. Glover and M.E. Moseley, "Analysis and generalized correction of the effect of spatial gradient field distortions in diffusion-weighted imaging," *Magnetic Resonance in Medicine*, **50**, 560-569 (2003)

Bammer, R., B. Acar and M.E. Moseley, "In vivo MR Tractography Using Diffusion Imaging," *European J. of Radiology,* **45(3)**, 223-234 (2003)

Acar, B., C.F. Beaulieu, S.B. Gokturk, C. Tomasi, D.S. Paik, R.B. Jeffrey, Jr., J. Yee and S. Napel, "Edge Displacement Field Based-Classification for Improved Detection of Polyps in CT Colonography," *IEEE Transactions on Medical Imaging,* **21(12)**, 1461-1467 (2002)

Gokturk, S.B., C. Tomasi, B. Acar, C.F. Beaulieu, D.S. Paik, R.B. Jeffrey, Jr., J. Yee and S. Napel, "A statistical 3D pattern processing method for computer aided detection of polyps in CT colonography," *IEEE Transactions on Medical Imaging,* **20(12)**, 1251-1260 (2001)

Hnatkova, K., Ryan, S.J., Bathen, J., Acar, B., Batchvarov, V., Hoium, H.H., Malik, M., "T-wave morphology differences between patients with and without arrhythmic complication of ischemic heart disease", *Journal Of Electrocardiology,* **34(S)**, pp.113-117 (2001)

Batchvarov, V., Dilaveris, P., Farbom, P., Ghuran, A., Acar, B., Hnatkova, K., Camm, A.J., Malik, M., "New Descriptors Of Homogeneity Of The Propagation Of Ventricular Repolarization", *PACE-Pacing And Clinical Electrophysiology*, 23(11/2), pp.1968-1972 (2000)

Malik, M., B. Acar, Y. Gang, Y.G. Yap, K. Hnatkova and A.J. Camm, "QT dispersion does not represent electrocardiographic interlead heterogeneity of ventricular repolarization," *Journal Of Cardiovascular Electrophysiology,* **11(8)**, 835-843 (2000)

Zabel, M., B. Acar, T. Klingenheben, M.R. Franz, S.H. Hohnloser and M. Malik, "Analysis of 12-lead T-wave morphology for risk stratification after myocardial infarction," *Circulation,* **102(11)**, 1252-1257 (2000)

Acar, B., I. Savelieva, H. Hemingway and M. Malik, "Automatic Ectopic Beat Elimination In Short-term Heart Rate Variability Measurement," *Computer Methods And Programs In Biomedicine,* **63(2)**, 123-131 (2000)

Acar, B. and H. Köymen, "SVD Based Online Exercise ECG Signal Orthogonalization," *IEEE Transactions On Biomedical Engineering,* **46(3)**, 311-321 (1999)

Acar, B., G. Yi, K. Hnatkova and M. Malik, "Spatial, Temporal And Wavefront Direction Characteristics Of 12-Lead T Wave Morphology," *Medical & Biological Engineering & Computing,* **37(5)**, 574-584 (1999)

Acar, B., "New approaches to T-wave analysis from surface ECG," *Cardiac ElectroPhysiology Review (CEPR)*, **3(4)**, 319-323 (1999) CEPR has been merged into Journal of Interventional Cardiac Electrophysiology

Book Chapters/Sections & Other

CB Akgul, B. Acar , "Future PACS for decision support: content-based case retrieval", *International Hospital*, Vol 38, March/April 2012

Acar, B., Yoruk, E., "DT-MRI Connectivity and/or Tractography?: Two New Algorithms", *Tensors in Image Processing and Computer Vision,* Aja-Fernández, S.; de Luis García, R.; Tao, D.; Li, X. (Eds.), Series: Advances in Pattern Recognition, ISBN: 978-1-84882-298-6, Springer-Verlag London, 2009.

Brun, A., Martin-Fernandez, M., Acar, B., Munoz-Moreno, E., Cammoun, L., Sigfridsson, A., Sosa-Cabrera, D., Svensson, B., Herberthson, M., Knutsson, H., "Similar Tensor Arrays – A Framework for Storage of Tensor Array Data" *Tensors in Image Processing and Computer Vision,* Aja-Fernández, S.; de Luis García, R.; Tao, D.; Li, X. (Eds.), Series: Advances in Pattern Recognition, ISBN: 978-1-84882-298-6, Springer-Verlag London, 2009.

Cammoun, L., Castano-Morana, C.A., Munoz-Moreno, E., Sosa-Cabrera, D., Acar, B., Rodriguez-Florido, M.A., Brun, A., Knutsson, H., Thiran, J.P., "A Review of Tensors and Tensor Signal Processing" *Tensors in Image Processing and Computer Vision,* Aja-Fernández, S.; de Luis García, R.; Tao, D.; Li, X. (Eds.), Series: Advances in Pattern Recognition, ISBN: 978-1-84882-298-6, Springer-Verlag London, 2009.

Patents

Methods of characterizing ventricular operations and applications thereof
Malik, M., Acar B., Batchvarov V.N.. US Patent Office: US6438409 20/08/2002
(Licensed by Medtronic)

Methods of characterizing ventricular operations and applications thereof
Acar B., Batchvarov V.N., Malik, M.,. European Patent Office: EP1038498 27/09/2000
(Licensed by Medtronic)

Characterization and Correction of Spatial Gradient Field Nonuniformities.

Bammer R., Markl M., Acar B., Pelc N., Moseley M.E. US Patent Office: US6969991 17/06/2004 (Licensed by GE)

Method for matching and registering medical image data.
Acar, B., Beaulieu, C.F., Paik, D.S., Napel, S.A., Jeffrey, R.B.Jr.. US Patent Office: US7224827 29/05/2007

Method for detecting and classifying a structure of interest in medical images.
Acar, B., Beaulieu, C.F., Gokturk, S.B., Tomasi, C., Paik, D.S., Jeffrey, R.B.Jr., Napel, S.A. US Patent Office: US7272251 18/09/2007

Three-dimensional pattern recognition method to detect shapes in medical images
Gokturk, S.B., Tomasi, C., Acar, B., Beaulieu, C.F., Napel, S.A., Paik, D.S. US Patent Office: US7346209 18/03/2008

Heat diffusion based detection of structures of interest in medical images.
Acar, B., Konukoglu, E., Beaulieu, C.F., Napel, S.,A., Paik, D.S. US Patent Office: US7729739 01/06/2010

Selected Conference Publications

Durusoy, G., Karaaslanli, A., Yuksel, D., Yildirim, Z., Acar, B. "Multi-Modal Brain Tensor Factorization: Preliminary Results with AD Patients", In *2nd International Workshop on Connectomics in Neuroimaging* (*CNI 2018*, in conjunction with *MICCAI 2018*), Granada, Spain

Onay, M.S., Kucukaslan, U., Ulasoglu-Yildiz, C., Acar, B. "fMRI Guided Personalization of Cortical Parcellation Maps", In *RSNA 2018*, Chicago, IL, USA

Yildirim, E., Buyukiscan, E.S., Kurt, E., Yildiz, C. U., Tatlidede, A.D., Bilgiç, B., Hanagasi, H., Bayram, A., Acar, B., Demiralp, T., Gurvit, H.I. "Differential Resting State Connectivity And Its Relationship With Cognitive Performance Among Participants With Subjective Cognitive Impairment (SCI), Mild Cognitive Impairment (MCI), And Early Stage Alzheimer's Disease (AD)", In *AAIC 2017,* London, UK (The Journal of the Alzheimer's Association , 13/7 , pp.744-745, 2017)

Karakuzu A, Pamuk U, Ozturk C, Acar B, Yucesoy CA, "Combined Diffusion Tensor and Magnetic Resonance Imaging for in vivo Assessment of Human Muscle Function", In *Congress of the European College of Sport Science, 2016,* Essen, Germany

Tuzer M., Yazici A., Acar B., Boyman M. "A Multiray Approach To Phased Array US Simulation From CT Images". In *CARS 2015,* Barcelona, Spain (International Journal of Computer Assisted Radiology and Surgery, S1, p. 215, 2015)

Pamuk, U., Karakuzu, A., Akyazi, P., Acar, B., Öztürk, C., Yücesoy, C.A., "MRI analyses indicate non-uniform human muscle tissue deformations and confirm theoretically anticipated sarcomere length heterogeneity, in vivo", In *BIYOMUT 2014*, Istanbul, Turkey

Arpak, A, Pamuk, U, Ozturk, C.,Acar, B., Yucesoy, C.A., "Technical Development for Diffusion Tensor Analysis and Fiber Tracking in Lower Leg Muscles", In *BIYOMUT 2012*, Istanbul, Turkey

Derman, E., Yaman, A., Acar, B., Yücesoy, C.A., "Kas Deformasyon Analizi İçin Birleşik Rijit-Elastik Çakıştırma", In *BIYOMUT 2012*, Istanbul, Turkey

Marvasti N.B., Akgül C.B., Acar B., Kökciyan N., Üsküdarlı S., Yolum P., Turkey R., Bakir B. "Clinical Experience Sharing by Similar Case Retrieval". In *1st ACM MM Workshop on Multimedia Indexing and Information Retrieval for Healthcare (ACM MM 2013)*, Barcelona, Spain

Kokciyan N., Turkay R., MD, Uskudarli S., Yolum P., Acar B., PhD; Bakir B., MD. "ONLIRA - A Semantic Knowledge Representation of Liver CT Images". In *RSNA 2013*, Chicago, IL, USA (Supplement of Radiology)

Kokciyan, N, Turkay, R, Uskudarli, S., Yolum, P, Bakir, B, Acar, B. "CARERA – Karaciğer Vakalarında Klinik Deneyim Paylaşım Platformu", In *Turkiye Radyoloji Kongresi (TURKRAD) 2013*, Antalya, Turkey

Marvasti, NB, Acar, B. "Assessment of MRF Based Joint Scale Selection and Segmentation for 3D Liver Vessel Segmentation", In *Sinyal Isleme ve Uygulamaları Kurultayı (SIU 2013), Cyprus*

Gurol, OC, Ozturk, S, Acar, B, Sankur, B, Guney, M. "Sparse Disparity Map Estimation On Stereo Images", In *Sinyal Isleme ve Uygulamaları Kurultayı (SIU 2012)*, Fethiye, Turkey

Çabuk, A.D., E. Alpay and B. Acar, "Detecting Tubular Structures Via Direct Vector Field Singularity Characterization", In *32nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2010)*, Buenos Aires, Argentina.

Berkiten, S. and B. Acar, "A Pointwise Correspondence Based DT-MRI Fiber Similarity Measure", In *32nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2010)*, Buenos Aires, Argentina.

Bozkaya, U. and B. Acar, "SMT: Split/Merge Fiber Tractography for MR-DTI", In *Medical Image Computing and Computer-Assisted Intervention (MICCAI 2007)*, Brisbane, Australia (Lecture Notes in Computer Science, 4792, pp.153-160, Springer, 2007)

Yağcı, E. and B. Acar, "A Stereo Tracking System For Arbitrary Slicing Of Volumetric Radiological Data", In *Sinyal Isleme ve Uygulamaları Kurultayı (SIU 2007)*, Eskisehir, Turkey

Konukoglu, E., B. Acar, D.S. Paik, C.F. Beaulieu, and S. Napel, "Polyp Enhancement Scheme for Improved Detection of Colonic Polyps in CT Colonography", In *Radiological Society of North America (RSNA 2005) Annual Meeting,* Chicago, USA

Yörük, E., B. Acar and R. Bammer, "A Physical Model for MR-DTI Based Connectivity Map Computation", In *Medical Image Computing and Computer-Assisted Intervention (MICCAI 2005)*, Palm Springs, CA, USA (Lecture Notes in Computer Science, 3749, pp.213-220, Springer, 2005)

Yörük, E. and B. Acar, "Structure Preserving Regularization Of DT-MRI Vector Fields by Nonlinear Anisotropic Diffusion Filtering", In *European Signal Processing Conference (EUSIPCO 2005)*, Antalya, Turkey

Konukoglu, E., B. Acar, D.S. Paik, C.F. Beaulieu and S. Napel, "Heat Diffusion Based Detection Of Colonic Polyps In CT Colonography", In *European Signal Processing Conference (EUSIPCO 2005)*, Antalya, Turkey, (3rd Place In EUSIPCO 2005 Student Paper Contest)

Acar, B., R. Bammer and M.E. Moseley, “Comparative Assessment Of DT-MRI Fiber Tractography Algorithms”, In *International Society of Magnetic Resonance in Medicine (ISMRM 2003) Meeting,* Toronto, Canada

Acar, B., S. Napel, D.S. Paik, P. Li, J. Yee, C.F. Beaulieu and R.B. Jeffrey, Jr., “Registration of Supine and Prone CT Colonography Data: Method and Evaluation”, In *Radiological Society of North America (RSNA 2001) Annual Meeting,* Chicago, USA (Radiology, 221(P), p.332, 2001)

Acar, B., S. Napel, D.S. Paik, S.B. Gokturk, C. Tomasi and C.F. Beaulieu, “Using Optical Flow Fields For Polyp Detection In Virtual Colonoscopy”, In *Medical Image Computing and Computer-Assisted Intervention (MICCAI 2001)*, Utrecht, The Netherlands (Lecture Notes in Computer Science, 2208, pp.637-644, Springer-Verlag, 2001)

Gokturk, S.B., C. Tomasi, B. Acar, D.S. Paik, C.F. Beaulieu and S. Napel, “A Learning Method For Automated Polyp Detection”, In *Proc. Medical Image Computing and Computer-Assisted Intervention (MICCAI 2001)*, Utrecht, The Netherlands (Lecture Notes in Computer Science, 2208, pp.85-93, Springer-Verlag, 2001)

Hnatkova, K., S.J. Ryan, J. Bathen, B. Acar, V.N. Batchvarov, H.H. Hoium and M. Malik, “T-wave morphology differences between patients with and without arrhythmic complication of ischaemic heart disease”, In *26th Annual ISCE Conference, Stuart, Florida (*Extended to full paper: *Journal of Electrocardiology, 34, 113-117, 2001)*

Batchvarov, V., P. Dilaveris, P. Farbom, A. Ghuran, B. Acar, K. Hnatkova, A.J. Camm and M. Malik, “New Descriptors of Homogeneity of the Propagation of Ventricular Repolarisation”, In *Cardiostim 2000 Congress in Cardiac Electrophysiology,* Nice Acropolis, France (Extended to full paper: *PACE*, 23(11/2), pp.1968-1972, 2000*)*

Zabel, M, B. Acar, J.E.P. Waktare, T. Klingenheben, M.R. Franz, S.H. Hohnloser and M. Malik, “Twelve-lead T wave morphology analysis for risk stratification in post myocardial infarction patients”, In *American Heart Association Annual Meeting (AHA 1999),* Atlanta, USA (Circulation, 100(18/SS), p 2684, 1999)

Acar, B., G. Yi and M. Malik, “Concept Of The T-Wave Morphology Dispersion”, In *Computers in Cardiology 1999*, Hannover, Germany

Malik, M., B. Acar, G. Yi and Y.G. Yap, “QT Dispersion Does Not Express Spatial Heterogeneity Of Ventricular Refractoriness In 12 Lead ECGs”, In *American Heart Association Annual Meeting (AHA 1999)*, Atlanta, USA (Circulation, 100/18(S), 245, 1999)

Acar, B., G. Yi and M. Malik, “T Wave Morphology Dispersion: Experience In Hypertrophic Cardiomyopathy Patients”, In *NASPE 1999 - 20th Annual Scientific Sessions*, Toronto, Canada (PACE, 22(4) Part II, p.886, 1999)

Acar, B., and H. Köymen, “Online Exercise ECG Signal Orthogonalization”, In *Computers in Cardiology 1996*, Indiana, USA

Invited Talks

AI with Applications in Breast Cancer Imaging, *15th National Breast Diseases Congress*, Antalya, Turkey, October 2019

Structural & Functional Brain Networks, *40th Turkish Radiology Congress, Antalya*, Turkey, November 2019

Imaging The Brain Wiring, *Turkish OHBM Meeting,* Istanbul, Turkey, November 2017

B-AĞ Platformunda Yapısal - İşlevsel Beyin Ağ Analizi, *6. Ulusal Alzheimer Kongresi,* Antalya, Turkey, March 2016

Composite Networks: Joint Structural-Functional Modeling of Brain, *Dagstuhl Seminar on Multidisciplinary Approaches to Multivalued Data: Modeling, Visuzalization, Analysis,* Germany, April 2016

Clinical Experience Sharing, *Cognition-Guided Surgery Research Center,* Karlsruhe, Germany, April 2013

Beyin Haritalama: Görüntülerden Ağlara (Brain Mapping: From Images to Networks), *51. Ulusal Nöroloji Kongresi (51st National Neurology Congress),* Belek, Antalya, 2015

Awards/Scholarships

2012	DFG Mercator Visiting Professorship (TU Munich, Germany)
2008	Turkish Academy of Sciences, Young Scientist Award (TUBA-GEBIP)
2006	Excellence in Research Award, Bogazici University Foundation.

Editorial Positions

EURASIP Journal on Advances in Signal Processing, Editorial Board Member

Major Review Duties

Journals:

- IEEE Transactions on Biomedical Engineering, IEEE
- IEEE Transactions on Medical Imaging, IEEE
- IEEE Journal of Biomedical and Health Informatics, IEEE
- Neuroimage
- Medical Image Analysis, Elsevier
- International Journal of Computer Assisted Radiology and Surgery, Springer
- Medical & Biological Engineering & Computing, Springer
- Journal on Advances in Signal Processing, EURASIP

Funding Agencies:

- TUBITAK-ARDEB (The Scientific and Technological Research Council of Turkey – Academic Support)
- TUBITAK-TEYDEB (The Scientific and Technological Research Council of Turkey – Industrial Support)
- TTGV (Technology Development Foundation of Turkey)
- EUREKA Eurostars Programme
- Innovation Fund Denmark (IFD)

Organizing / Program Committee Member

- MICCAI 2016, Athens, Satellite Events Chair
- imageCLEF, Liver CT Annotation Challenge 2014 & 2015, Co-organizer
- MICCAI, ISPA, ICIP, ICASSP, ICPR, SIU, EUSIPCO, MCBR-CDS 2011/2012 (MICCAI Satellite event): PC member

Courses Taught

EE373 (Signals & Systems)
EE574 (Image Analysis)
EE475 (Digital Image Processing)
EE303 (Complex Variables and Applications)
EE570 (Advanced Signal Processing)
EE58H (Digital Video Processing)
EE58A (Machine Learning)
EE142 (Digital Design)
EE201 (Electrical Circuits I)
EE202 (Electrical Circuits II)
EE212 (Intro. to Electronics Eng. for CmpE)
EE210 (Introduction to Electrical Eng.)

Supervised MS/PhD Theses

Multi-Modal Tensor Representations of Brain Networks (PhD)
Göktekin Durusoy, EE, Boğaziçi University
February 2021

Machine Health Monitoring for Cyber-Physical Systems (PhD)
Gürkan Aydemir, EE, Boğaziçi University
May 2020

Structural Brain Connectome Embedding For Alzheimer's Disease (MS)
Gurur Gamgam, EE, Boğaziçi University
June 2019

Spectral Analysis of Cancer Biomarkers in Human Serum Using a Custom Portable Analyzer (MS)
Kaan Oktay, EE, Boğaziçi University
June 2019

Novelty Detection On Streaming Sensor Data For IIoT Applications (MS)
Alper Bayram, EE, Boğaziçi University
June 2019

Content Based Medical Image Retrieval (PhD)
Neda Barzegar Marvasti, EE, Boğaziçi University
November 2017

Seed-Based And Data-Driven Analyses Of Default Mode Network Connectivity Measures In Dementia (MS)
Başak Kılıç, SCO, Boğaziçi University
January 2017

2D To 3D Video Conversion (MS)
Aysun Coban, EE, Boğaziçi University
July 2016

Ultrasound Simulations Using CT Images As Priors (MS – Co-supervisor)
Mert Tuzer, Physics, Boğaziçi University
July 2015

Rigid & Elastic Composite Registration of 3D Leg T1-Weighted MR Images for Strain Analysis (MS)
Ekberjan Derman, EE, Boğaziçi University
August 2013

Skeletal Muscle Deformation Analysis Using Diffusion Tensor Magnetic Resonance Imaging (MS)
Pınar Akyazı, EE, Boğaziçi University
August 2013

Liver Segmentation in 3D CT Data (MS)
Serkan Çimen, EE, Boğaziçi University
September 2011

Assessing DT-MRI Tractography Results via Sampling the Fiber Tract Space (MS)
Ahmet Burak Yoldemir, EE, Boğaziçi University
June 2011

3D Stylus: A Human Computer Interface For 3D Environment (MS)
Enver Yagci, System & Control Engineering, Bogazici University
June 2007

SMT: Split/Merge Tractography (MS)
Ugur Bozkaya, Biomedical Eng. , Boğaziçi University
May 2006

PELS: Polyp Enhancing Level-Sets (MS)
Ender Konukoglu, EE, Boğaziçi University
June 2005

VAVframe: Volumetric Analysis and Visualization Framework (MS – Co-supervisor)
Erhan Durusut, CmpE, Boğaziçi University
April 2005

Languages Turkish (Mother tongue) , English (fluent)