Dr-Ing. Burak Akin
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EDUCATION

June 2020	**Albert Ludwigs University of Freiburg,** Freiburg / Germany Dr.-Ing. Technische Fakultät (Magna Cum Laude) Supervisor: Prof.Dr.Dr.h.c. Jürgen Hennig
Dec 2012	**Middle East Technical University,** Ankara/Turkey M.Sc. Biomedical Engineering (Bioelectricity & Biomagnetism track)
May 2008	**Bilkent University**, Ankara/Turkey B.Sc., Electrical and Electronics Engineering

WORK&RESEARCH EXPERIENCE

Jan 2021 –	**Section on Functional Imaging Methods** *Post-doctoral Fellow,* National Institutes of Health, Bethesda, MD. High resolution fMRI, RSN Characterization, Cognitive studies (Ref: Dr.Peter Bandettini)
Jan 2013 – Dec 2020	**University Medical Center Freiburg Dept.of Radiology** *Research Assistant,* Freiburg, Germany Ultra-Fast fMRI, Simultaneous EEG-fMRI, RSN Characterization, Epilepsy (Ref: Dr. Pierre LeVan)
Aug 2015 – Nov 2015	**Seaman Family MR Research Centre** *Visiting Researcher*, Calgary, Alberta, Canada Simultaneous intracranial EEG&fMRI, Spatiotemporal features of iEEG related with BOLD and epileptic activity (Ref: Paolo Federico ,MD PhD)
Oct 2008 – Dec 2012	**National Magnetic Resonance Research Center (UMRAM)** *Research Engineer*, Ankara, Turkey Clinical applications of Neuroimaging, MR safety Interventional MRI & RF coils (Ref: Prof.Dr. Ergin Atalar)
Aug-Sept 2007	**Cabot Communications,** Izmir, Turkey *Trainee*, R&D Department Atari Support for ST T820 chip in Vestel Digital Satellite Receiver was coded in C#

Publications

16) Hennig J, Kiviniemi V, Riemenschneider B, Barghoorn A, **Akin B**, Wang F, LeVan P **15 Years MR-encephalography** *MAGMA 2020 Oct 20.*

15) **Akin B**, Wang F, Hennig J **Resting state network differences in time domain principal component reconstruction (tPCR) with respect to iterative reconstruction in fast fMRI** *2020 (In preparation)*

14) Speck I **,Akin B**, Aschendorff A, Frings L., Meyer P.T., LeVan P **Cross-Modal adaptation in patients with asymmetric hearing loss** *2020 (In preparation)*

13) Lennartz C **,Akin B**, Wang F, Hennig J, LeVan P **Estimation of the hemodynamic response function from resting state fMRI spectra** *2020 (Submitted)*

12) **Akin B**, Hennig J, LeVan P **Dynamic functional connectivity reveals consistent transient resting-state network interactions**. *2020 (In preparation)*

11) Riemenschneider B, **Akin B**, LeVan P, Hennig J **Trading off spatio-temporal properties in 3D high-speed fMRI using interleaved stack-of-spirals trajectories**. *2020 (Submitted)*

10) Winter U ,Levan P, Borghardt T.L., **Akin B**, Wittmann M, Leyens Y. M., Schmidt S. **Content-free Awareness: EEG-fcMRI Correlates of Consciousness as such in an Expert Meditator**. *2019 Frontiers in Psychology*

9) Atagun MI, **Akin B**, Algin O, Sikoglu EM, Can SS, Kaymak SU, Caykoylu A, Moores C, Phillips M, Ongur D. **Intrinsic oscillations of auditory networks in schizophrenia and bipolar disorder** *Dusunen Adam The Journal of Psychiatry and Neurological Sciences 2019;32:4-13*

8) Ofer I, Jacobs J, Jaiser N, **Akin B**, Hennig J, Schulze-Bonhage A, LeVan P **Cognitive and behavioral comorbidities in Rolandic epilepsy and their relation with default mode network's functional connectivity and organization.***Epilepsy Behav. 2018 Jan;78:179-186*

7) LeVan P, **Akin B** , Hennig J **Fast imaging for mapping dynamic networks**. *Neuroimage. 2017 Aug 10*

6) Zaitsev M, **Akin B**, LeVan P, Knowles BR. **Prospective motion correction in functional MRI**. *NeuroImage. 2016 Nov 11.*

5) **Akin B**, Lee HL, Hennig J, LeVan P. **Enhanced subject-specific resting-state network detection and extraction with fast fMRI**. *Human brain mapping. 2017 Feb 1;38(2):817-30.*

4) Algin O, **Akin B**, Ocakoglu G, Ozmen E, **Fully-Automated Morphological Analysis of Patients with Obstructive Sleep Apnea** in *Turk Med J.Sci 2016, 10.3906 : 1408-148*

3) Özbay PS, Warnock G, Rossi C, Kuhn F, **Akin B**, Pruessmann KP, Nanz D. **Probing neuronal activation by functional quantitative susceptibility mapping under a visual paradigm: A group level comparison with BOLD fMRI and PET**. *NeuroImage. 2016 Aug 15;137:52-60.*

2) **Akin B.**, Ozdem C., Eroglu S., Keskin D.T., Fang F., Doerschner K., Kersten D. and Boyaci H. **Attention modulates neuronal correlates of interhemispheric integration and global motion perception**. *Journal of Vision 2014*

1) Eryaman Y, **Akin B** and Atalar E, **Reduction of implant RF heating through modification of transmit coil electric field**. *in Magn Reson Med 2011, 65:1305--1313.*

Abstracts

37) H.Song, **B. Akin**, J.Fischer, AC. Oezen, M.Bock **Measuring CMRO^2 in brain subcortical structures using dynamic ^{17}O-MRI** *ISMRM,2021*

36) W.Yang **B. Akin**, X.Gao, B.A Poser, J.Hennig **Multi-echo BOLD Index: Figuring out false positive and providing detailed activation patterns for task fMRI** *ISMRM 2021*

35) **B. Akin**, AC. Oezen **Microstrip Array Insert for Head Coils: Towards Layer fMRI at High Fields** *ISMRM Montreal,Canada 2019*

34) P.S.Ozbay, L. Kasper **B. Akin**, K.Pruessmann, D.Nanz, **Correlation and frequency based analyses between functional QSM and fMRI** *ISMRM Montreal,Canada 2019*

33) **B. Akin**, JG. Korvink, J.Hennig, P.Levan **Dynamic functional connectivity reveals altered subnetwork interaction within default-mode network hubs** *Resting State Brain Connectivity Montreal,Canada 2019*

32) S.Zhang, **B.Akin**, J.Hennig, P.Levan **Focal post-stimulation hippocampi ripple activity in simultaneous mice electrophysiological and fMRI** *OHBM Singapore 2018*

31) D.Huang, **B. Akin**, J.Hennig, P.Levan **Fine scale understanding of microstates in simultaneous EEG-fMRI study** *OHBM Singapore 2018*

30) AC. Oezen, **B. Akin**, M.Bock **Concurrent Excitation and Acquisition for the Ultimate MRI Experience: Silent, Implant Friendly, Nearly 100% Efficient** *ISMRM Paris France 2018*

29) **B. Akin**, C.Beers, I.Gaxiola, D.Pittman J.Hennig, P.Federico, P.Levan **Identification of reliably active epileptogenic areas in response to interictal discharges recorded with simultaneous iEEG-fMRI** *OHBM Vancouver Canada 2017*

28) W.Yang **B. Akin**, F.Wang , J.Hennig, P.Levan **Revealing the high frequency brain networks with multiband multi-echo fMRI data** *ISMRM Honolulu,Hawaii 2017*

27) C.Lennartz **B. Akin**, J.Hennig, P.Levan **A model-free approach for HRF estimation from resting state fMRI data** *OHBM Vancouver Canada 2017*

26) C.Arand, J.Schiefer, S.Rotter, **B. Akin**, J.Hennig, P.Levan **Covariance-based estimation of cerebral effective connectivity from fast BOLD-fMRI** *OHBM Geneva Switzerland 2016*

25) D.Huang, **B. Akin**, J.Hennig, P.Levan **Investigation of localized resting-state signatures of instantaneous focal background EEG activity** *OHBM Geneva Switzerland 2016*

24) **B. Akin**, JG. Korvink, J.Hennig, P.Levan **Dynamic functional connectivity reveals consistent transient resting-state network interactions** *OHBM Geneva Switzerland 2016*

23) C.Kimmig, J.Jacobs, **B. Akin**, L.Frings, P.Meyer, A.Schulze-Bonhage, J.Hennig, P.Levan **Resting-state fMRI detects hypometabolic brain areas in therapy-refractory focal epilepsy patients** *OHBM Geneva Switzerland 2016*

22) **B. Akin**, J.Jacobs, JG. Korvink, A.Schulze-Bonhage, J.Hennig, P.Levan **Simultaneous EEG-fMRI of cerebral network activity preceding absence seizures** *OHBM Honolulu,Hawaii 2015*

21) M.Atagun ,**B. Akin**, O.Algin, E.Sikoglu, S.Can, S.Ulusoy-Kaymak, A.Caykoylu, C.Moore M.Philips, D.Ongur, **Volumes and functional connectivity of auditory cortices in Schizophrenia and Bipolar disorder** *OHBM Honolulu,Hawaii 2015*

20) N.Schwaderlapp, **B. Akin**, A.Dreßing, R.Umarova, L.Beume, C.Schmidt, M.Hören, C.Kaller, JG. Korvink, K.Egger, H.Urbach, C.Weiller, J.Hennig, P.Levan , **Dynamic resting-state fMRI connectivity reflects behavioral measures in stroke patients** *OHBM Honolulu,Hawaii 2015*

19) P.S.Ozbay, C.Rossi, G.Warnock, F.Kuhn, **B. Akin**, K.Pruessmann, D.Nanz, **Independent Component Analysis(ICA) of functional QSM** *ISMRM Toronto,Canada 2015*

18) **B. Akin**, H.Lee, J.Hennig, P.Levan **Tracking instantaneous connectivity changes related to single-trial activation using ultra-fast fMRI** *OHBM Hamburg,Germany 2014*

17) **B. Akin**, H.Lee, N.Beck, J.Hennig, P.Levan **Ultra-fast fMRI using MREG improves subject specific extraction of Resting State Networks** *ISMRM-ESMRMB Milan, Italy 2014*

16) **B. Akin**, Z. Basgoze, D. Gokcay **An exploratory study on default mode network's time course analysis** *OHBM Seattle,USA 2013*

15) V. Acikel, O. Ulutan, A. Ozen, **B. Akin**, Y. Eryaman and E. Atalar, **A Novel MRI Based Electrical Properties Measurement Technique**, *ISMRM, Salt Lake City, Utah, 2013*

14) **B. Akin**, H.Bolay , D. Gokcay **Preliminary Results from Analysis of Default Mode Network Connectivity in Migraine Patients** *ESMRMB Lisbon,Portugal 2012*

13) A.Has, **B. Akin**, Irsel Tezer S. Saygi K.Oguz **Impact of Generalized Seizures on Hippocampal Sclerosis Associated White Matter Changes Assessed by Diffusion Tensor Imaging - Tract-Based-Spatial-Statistics** *ESMRMB Lisbon,Portugal 2012*

12) E. Kopanoglu, U. Yilmaz, **B. Akin**, V. Acikel and E. Atalar. **Localizing the excitation to reduce scan time using nonlinear gradient fields**, *Proc. ISMRM. 20, Melbourne, Australia, 2012.*

11) **B. Akin**, O. Algin, H. Arslan, E. Atalar; **Morphological assessment of patients with obstructive sleep apnea** *ESMRMB, Leipzig, Germany, 2011*

10) T. Demir, L. DeLaBarre, **B. Akin**, G. Adriany, K. Ugurbil and E. Atalar, *Optical Transmission System for High Field Systems*, *ISMRM, Montreal, Canada, 2011*

9) E. Kopanoglu, **B. Akin**, V. B. Erturk and E. Atalar, **SAR Reduction using Nonlinear Gradients**, *ISMRM, Montreal, Canada, 2011*

8) Y. Eryaman, **B. Akin**, C. Oto, O. Algin and E. Atalar, **Reduction of RF Heating of Metallic Devices by Using a Two-Channel Transmit Array System: Application to Arbitrary Lead Geometries**. *ISMRM, Montreal, Canada, 2011*

7) O. Algin, **B. Akin**, H. Arslan and E. Atalar, *Morphological Assessment of Patients with Obstructive Sleep Apnea*, ESMRMB, Leipzig, Germany, 2011

6) Celik H, Gulnerman MD, **B. Akin**, Atalar E, "**Inductively Coupled Birdcage Coil**". In: Proceedings of the 18th Annual Meeting of ISMRM, Stockholm, Sweden, 2010 (Abstract 3901)

5) Celik H, Sengezer N, **B. Akin**, Gulnerman MD, Insal BC, Kesre C, E. Atalar " *Safe Deep Brain Stimulator MR Imaging Experiments Using Fiber Optic Current Monitoring Feedback System*". In: Proceedings of the 18th Annual Meeting of ISMRM, Stockholm, Sweden, 2010 (Abstract 3897)

4) V. Acikel, **B. Akin**, I. Mahcicek, E. Atalar **Prediction of Implant Tip Heating Using Modified Transmission Line Method (MoTLiM) under MRI** In: Proceedings of the 18th Annual Meeting of ISMRM, Stockholm, Sweden, 2010

3) H. Celik, B. Insal, V Acikel, **B. Akin**, S. Olcum, O. Erturk and E. Atalar, **Safe MRI setup for deep brain stimulator: in vivo experiment**, ESMRMB,

2) Y. Eryaman, H. Celik, **B. Akin** and E. Atalar, **Reduction of Implant RF Heating by Modification of Electric Field Distribution**, ISMRM, Honolulu, Hawaii, 2009

1) **B. Akin** ,Eryaman Y.Atalar E. **A method for phantom conductivity and permittivity measurements,** ESMRMB Antalya,Turkey,2009

Patents	A.C. Ozen, **B. Akin**, *Einsatz für ein MR-Gerät, Verwendung eines solchen Einsatzes und MR-Messverfahren* DE102019002619A1 Offenlegungstag:2020.10.15

Projects

***Ph.D. Thesis:** Novel methods for mapping dynamic architecture of the human brain by using fast fMRI

***M.Sc. Thesis:** An exploratory study on default mode networks time course's analysis

***Senior Project:** An Isolated ECG amplifier design & EOG amplifier design to control patient beds at hospitals.

***Siemens TIM Trio 3T (Collaborations in UMRAM)**
-Optical gradient waveform observation system.
-Patient table simulator for Coil implementation.
-Surface Coil design for Occipital cortex fMRI
-Rat Coil design and implementation for brain imaging @ 3T
-Wrist Coil design & implementation for Carpal Tunnel Syndrome
-Endorectal Coil design & implementation for anal fissure and prostate imaging

SKILLS AND ABILITIES

Computer	**Programming Languages**: Matlab, Java, Assembly (Intel),C#.	
	Application Programs: Syngo Siemens, AFNI ,FSL ,Brain Voyager,Freesurfer, SPM,Pspice,Magic, IRSIM,5Spice, Proteus, LabView, Maple, OrCad , AutoCAD.	
	Operating Systems: Linux**,** MS-DOS, Windows	
Languages	English (Fluent), German (DSH), Uzbek (Intermediate),French(Beginner), Turkish (Native)	

HONORS & AWARDS

2020	ISMRM 2020, Invited Speaker for educational program in fMRI
2019	3rd Prize Poster award Kick-off Meeting Center of Basics in NeuroModulation
2015	Exchange PhD scholar, Seaman Family MR Research Center, Calgary Canada
2014	2nd Prize Poster award Turkish-German Satellite symposium OHBM Hamburg
2013	ISMRM Conference Stipend - Milan OHBM Conference Stipend - Seattle
2012	TMRD (Turkish MR Society) Conference Stipend for ESMRMB Lisbon
2003, 2008	Bilkent University, Ankara, Turkey 2 Honor Degrees.
1998 – 2002	Izmir Fatih Science High School, Izmir Honor Plaquette in each year.
1997 - 2001	Qualified participant of National Chemistry Olympiads organized by TUBITAK (Scientific and Technological Research Council of Turkey) in each year