

# Deniz Kumral

## *Cirriculum Vitae*

Department of Psychology  
Neuropsychology  
University of Freiburg  
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### **EDUCATION**

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Expected June 2021: **Charité – Universitätsmedizin Berlin, Berlin, Germany**

- Dr.rer.med Dissertation: Variability in heart and brain activity across the adult lifespan

September 2012 – December 2014: **Freie Universität Berlin, Berlin, Germany**

- MSc in Social Cognitive Affective Neuroscience

September 2008 – June 2012: **Istanbul Bilgi University, Istanbul, Turkey**

- BA in Psychology, Salutatorian at Faculty of Arts and Science, Salutatorian
- BA in Management of Performing Arts (Double Major), Valedictorian

January 2011 – June 2011: **Utrecht University, Utrecht, The Netherlands**

- Social Neuroscience Minor Degree

September 2003 – June 2008: **Deutsche Schule Istanbul, Istanbul, Turkey**

- Abitur, Bundesministerium für Bildung und Forschung, Germany

### **RESEARCH EXPERIENCE & INTERESTS**

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February 2021 – Present: **Albert Ludwig University of Freiburg, Department of Psychology, Neuropsychology, Freiburg, Germany (PI: Monika Schönauer, funded by Deutsche Forschungsgemeinschaft (DFG) - Project number 426865207)**

(April 2022 – December 2022: Maternal leave)

January 2015 – Present: **Max Planck Institute for Human Cognitive and Brain Sciences, Department of Neurology, Leipzig, Germany (PI: Arno Villringer)**

### **FUNDINGS AND AWARDS**

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- Christiane Nüsslein-Volhard-Foundation Stipend (2023)
- MPI PhD Scholarship (2014-2017)
- Adile Mermerci Foundation Stipend (2012-2013)
- Full Scholarship at Istanbul Bilgi University (2008-2012)
- Erasmus Exchange Program Scholarships (2010-2011)

## PUBLICATIONS

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### *Original Publications (chronological):*

1. Schaare L, Blöchl M, **Kumral D**, Uhlig M, Lemcke L, Valk S, Villringer, A. Mental health, blood pressure and the development of hypertension, 2023, provisionally accepted, *Nature Communications*, IF: **17.7**
2. Blöchl M, Schaare L, **Kumral D**, Gaebler M, Nestler S, Villringer A. Vascular risk factors, white matter microstructure, and depressive symptoms: A mediation analyses using the UK Biobank, 2023, accepted, *Psychological Medicine* IF: **7.7**
3. Cesnaite E, Steinfath TP, Idaji MJ, Stephani T, **Kumral D**, Haufe S, Sander C, Hensch T, Hegerl U, Riedel-Heller S, Roehr S, Schroeter M, Witte V, Villringer A, Nikulin V. Alterations in rhythmic and non-rhythmic resting-state EEG activity and their link to cognition in older age, 2023; 268:119810, *NeuroImage*, doi: 10.1016/j.neuroimage.2022.119810 IF: **7.4**
4. Uhlig M, Reinelt JD, Lauckner ME, **Kumral D**, Schaare HL, Mildner T, Babayan A, Engert V, Villringer A, Gaebler M. Rapid volumetric brain changes after acute psychosocial stress, 2023; 265:119760, doi: 10.1016/j.neuroimage.2022.119760 IF: **7.4**
5. **Kumral D**, Al E, Cesnaite E, Kornej J, Sander C, Hensch T, Zeynalova S, Tautenhahn S, Hagendorf A, Laufs U, Wachter R, Nikulin V, Villringer A. The Neural Representation of the Heart is Strongly Attenuated in Patients with Atrial Fibrillation, 2022, *JACC: Clinical Electrophysiology*; 8 (10), 1219-1230, doi: 10.1016/j.jacep.2022.06.019 IF: **6.1**
6. Christoph E, Kerstin W Samira Z, Ronny B, ... **Kumral D**,... LIFE-Adult-Study working group, Cohort Profile: The LIFE-Adult-Study, *International Journal of Epidemiology*, 2022, 1–14, doi: 10.1093/ije/dyac114 IF: **9.7**
7. **Kumral D\***, Cesnaite E\*, Beyer F, Hofmann SM, Hensch T, Sander C, Hegerl U, Haufe S, Villringer A, Witte AV, Nikulin V. Relationship between Regional White Matter Hyperintensities and Alpha Oscillations in Older Adults, *Neurobiology of Aging*, 2022, 112, 1-11, doi: 10.1016/j.neurobiolaging.2021.10.006 IF: **5.1**
8. Roebbig J, Erbey M, Babayan A, Reiter A, **Kumral D**, Schaare HL, Reinelt J, Gaebler M, Kunzmann U, Villringer A. Anger Regulation Choice- the Role of Age and Habitual Reappraisal, *Emotion*, 2021, doi: 10.1037/emo0000915. IF: **5.5**
9. Stegmann T, Chu M, Witte V, Villringer A, **Kumral D**, Riedel-Heller SG. Laufs U, Löffler M, Wachter R, Zeynalova S. Heart failure is independently associated with white matter lesions on magnetic resonance imaging: insights from the LIFE-Adult Study, *ESC Heart Failure*, 2020, doi: 10.1002/ehf2.13166 IF: **3.6**
10. Erbey M, Roebbig J, Nierhaus T, Babayan A, **Kumral D**, Reinelt J, Reiter A, Schaare HL, Uhlig M, Gaebler M, Villringer A. Positivity in Younger and in Older Adults: Associations with Future Time Perspective and Socioemotional Functioning, *Frontiers in Psychology*, 2020; 11: 3146, doi:10.3389/fpsyg.2020.567133 IF: **4.2**
11. Koenig J, Abler B, Agartz I, Åkerstedt T, Andreassen OA, ..., **Kumral D**, ..., Yoo HJ, Quintana DS. Cortical Thickness and Resting State Cardiac Function Across the Lifespan: A Cross-Sectional Pooled Mega Analysis. *Psychophysiology*, 2020, 1–16, doi:10.1111/psyp.13688 IF: **4.3**

12. **Kumral D**, Şansal F, Cesnaite E, Mahjoory K, Al E, Gaebler M, Nikulin VV, Villringer A. BOLD and EEG signal variability at rest differently relate to aging in the human brain. *Neuroimage*. 2020;207:116373, doi:10.1016/j.neuroimage.2019.116373 IF: **7.4**
13. **Kumral D**, Schaare HL, Beyer F, Reinelt J, Uhlig M, Liem F, Lampe L, Babayan A, Reiter A, Erbey M, Roebbig J, Loeffler M, Schroeter ML, Husser D, Witte AV, Villringer A, Gaebler M. The age-dependent relationship between resting heart rate variability and functional brain connectivity. *Neuroimage*. 2019;185:521-533, doi:10.1016/j.neuroimage.2018.10.027 IF: **7.4**
14. Morys F, Janssen L, Cesnaite E, Garcia-Garcia I, Kube J, Schimpf A, **Kumral D**, Mehl N, Mahjoory K, Margulies DS, Gaebler M, Villringer A, Neumann J, Nikulin VV, Horstmann A, Hemispheric bias in resting state EEG and fMRI is related to approach/avoidance behaviors, but not BMI. *Human Brain Mapping*. 2019; 1–17, doi:10.1002/hbm.24864 IF: **5.4**
15. Reinelt J, Uhlig M, Müller K, Mark E. L, **Kumral D**, Schaare HL, Baczkowski BM, Babayan A, Miray E, Roebbig J, Reiter AMF, Bae Yoon J, Kratzsch J, Thiery J, Hendlert T, Villringer A, Gaebler M. Acute psychosocial stress alters thalamic network centrality. *Neuroimage*. 2019; 199:680-690, doi:10.1016/j.neuroimage.2019.06.005 IF: **7.4**
16. Babayan A, Erbey M, **Kumral D**, Reinelt JD, Reiter AMF, Röbbig J, ... , Margulies DS, Gaebler M, Villringer A. Data descriptor: A mind-brain-body dataset of MRI, EEG, cognition, emotion, and peripheral physiology in young and old adults. *Scientific Data*. 2019;6:180308, doi:10.1038/sdata.2018.308 IF: **8.5**
17. Mendes N, Oligschläger S, Lauckner ME, Golchert J, Huntenburg JM, Falkiewicz M, Ellamil M, Krause S, Baczkowski BM, Cozatl R, Osoianu A, **Kumral D**, Pool J, Golz L, Dreyer M, Haueis P, Jost R, Kramarenko Y, Engen H, Ohrnberger K, Gorgolewski KJ, Farrugia N, Babayan A, Reiter A, Schaare HL, Reinelt J, Röbbig J, Uhlig M, Erbey M, Gaebler M, Smallwood J, Villringer A, Margulies DS. Data descriptor: A functional connectome phenotyping dataset including cognitive state and personality measures. *Scientific Data*. 2019;6:180307, doi:10.1038/sdata.2018.307 IF: **8.5**
18. Schaare HL, Kharabian Masouleh S, Beyer F, **Kumral D**, Uhlig M, Reinelt JD, Reiter AMF, Lampe L, Babayan A, Erbey M, Roebbig J, Schroeter ML, Okon-Singer H, Müller K, Mendes N, Margulies DS, Witte AV, Gaebler M, Villringer A. Association of peripheral blood pressure with gray matter volume in 19- to 40-year-old adults. *Neurology*. 2019;92(8):758-773, doi:10.1212/WNL.0000000000006947, IF: **12.2**

\* contributed equally

Sum IF: **135.5**

### ***Preprints and In Preprations:***

1. **Kumral D**, Palmieri J, Gais S, Schönauer M. Real-world experiences shape neural activity and dream content in the sleeping brain, *in prep.*
2. **Kumral D**, Matzerath A, Leonhart R, Schönauer M. Spindle-dependent memory consolidation in healthy adults: A meta-analysis, *under review.*  
(preprint: <https://www.biorxiv.org/content/10.1101/2022.07.18.500433v1.abstract>)

### **SCIENTIFIC PROFILES**

- [https://scholar.google.com/citations?user=qnYo\\_KEAAAAJ&hl=en](https://scholar.google.com/citations?user=qnYo_KEAAAAJ&hl=en)
- <https://osf.io/g25z9/>
- <https://orcid.org/0000-0001-6584-7948>
- [https://www.researchgate.net/profile/Deniz\\_Kumral](https://www.researchgate.net/profile/Deniz_Kumral)

**Work as Reviewer for International Journals:** NeuroImage, NeuroImage: Clinical, JACC: Heart Failure, Scientific Reports, Journal of Neuroscience Methods, Cerebral Cortex, Neurobiology of Aging, Psychophysiology

## **SUPERVISION OF STUDENTS**

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Supervision of 4 Master Theses, and co-supervision of one PhD Student at Albert Ludwig University of Freiburg

*Master Theses and Internships:*

1. Tobias Kraus (2022) Acquisition and evaluation of human functional MRI-data subject to memory formation and consolidation, Master Thesis in Neuroscience, Albert Ludwig University of Freiburg
2. Bettina Wald (2022) Does it ring a bell? – The influence of semantic relatedness on learning performance, Master Thesis in Psychology, Albert Ludwig University of Freiburg
3. Eduard Stroukov (2021) Memory beyond the cortex, Master Thesis in Psychology, Albert Ludwig University of Freiburg
4. Miriam Kustermann (2021), Examining Memory Processing of Declarative Memories during Slow Wave Sleep, Master Thesis in Psychology, Albert Ludwig University of Freiburg
5. Alina Matzerath (2021), Spindle-dependent memory consolidation in healthy adults: A meta-analysis, Internship in Bachelor in Psychology, Albert Ludwig University of Freiburg

## **TEACHING & WORKSHOPS**

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- Part of lecture “Data acquisition, analysis and modeling course” for master students in Psychology at Albert Ludwig University of Freiburg (Teaching EEG & ECG, SS 2023)
- Part of course “Project Seminar” for master students in Psychology at Albert Ludwig University of Freiburg (Teaching Matlab, WS 2022)
- Part of course “Project Seminar” for master students in Psychology at Albert Ludwig University of Freiburg (Teaching R, WS 2021)

## **SKILLS**

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**Technical Skills:** Matlab, R, Python, MS Office, Bash (Shell), HTML, CSS, SQL, Git

**Research-related:** AFNI, FSL, SPM, fMRIPrep, FreeSurfer, Fieldtrip, EEGLAB, Brainstorm, Brain Vision Analyzer, Kubios

**Soft skills:** Academic writing, effective proposal writing, research funding, project management, social media, scientific communication

## **SELECTED TALKS AND CONFERENCE PRESENTATIONS**

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Kumral (2023), Real-world experiences shape neural activity and dream content in the sleeping brain, 46. Jahrestagung Psychologie und Gehirn, Freiburg, Germany

Kumral (2023), Real-world experiences shape neural activity and dream content in the sleeping brain, the 26<sup>th</sup> Conference of the European Sleep Research Society (European Sleep Research Society), Athens, Greece