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Main Research Area

Brain-Computer Interfaces (basic understanding of brain function, signal recording, signal processing, applications), BCI controlled neuroprostheses, communication in patients with disorders of consciousness, human motor and somatosensory system, (neuro) rehabilitation engineering and assistive technology, neuro-information systems research, functional brain mapping

Education

June 1992 General qualification for university entrance in electronics and informatics from the Secondary Technical and Vocational College (HTBLA) in Steyr, Austria.
May 2000 Diploma of the Graz University of Technology (TUG) in Electrical & Biomedical Engineering.
August 2004 PhD, received from TUG in Electrical Engineering.

Academic Milestones / Positions & Experience

August 2000-June 2001 Research assistant at the Ludwig Boltzmann Institute for Medical Informatics and Neuroinformatics, TUG. Start with a PhD program.

July 2001- August 2005 Contract assistant at the Institute of Electrical & Biomedical Engineering, Department of Medical Informatics (renamed 2004 to Institute for Human-Computer Interfaces), TUG.

8-19. April 2002 Investigation of ERD/ERS patterns during electrical muscular stimulation, Short Term Scientific Mission European COST Action B10, Orthopedic University Hospital II, Prof. H.-J. Gerner, PD Dr. R. Rupp, Heidelberg University.

10-28. October 2005 Implementation and supervising of a Telemonitoring system for the BCI2000, Institute of Medical Psychology and Behavioral Neurobiology, Prof. N. Birbaumer, Prof. A. Kübler, University of Tübingen (Germany) in collaboration with Prof. J. Wolpaw, Wadsworth Center, NY State Dep. of Health (Albany, NY, USA), NIH-Project HD30146/EB00856.

November 2005 PostDoc position at the Institute for Knowledge Discovery, BCI-Lab at TUG.

10-20. February 2006 Clinical evaluation of a Brain-Computer Interface for the use in a comatose patient, Prof. R. John, Brain Research Laboratories, Dep. of Psychiatry, New York University School of Medicine.

February 2006 Deputy head of the Institute for Knowledge Discovery, TUG.

November 2008 Habilitation for Medical Informatics. Universitätsdozent, TUG.

November 2009 Associate Professor

September 2011 Head of the Institute of Neural Engineering (renamed from Knowledge Discovery and BCI-Lab at TUG.

October 2014 Full Professor for Semantic Data Analysis

Research Achievements

Selected Journal Papers Gernot Müller-Putz (*correspondence)

1. **Tuning characteristics of low-frequency EEG to positions and velocities in visuomotor and oculomotor tracking tasks.** / Kobler R; Sburlea AI; **Müller-Putz G*** Scientific reports, 07.12.2018.
2. **Decoding natural reach-and-grasp actions from human EEG.** / Schwarz A; Ofner P; Pereira J; Sburlea AI; **Müller-Putz G*** Journal of neural engineering, Vol. 15, No. 1, 016005, 15.02.2018.
3. **Masked and unmasked error-related potentials during continuous control and feedback.** / Lopes Dias C; Sburlea AI; **Müller-Putz G*** Journal of neural engineering, Vol. 15, No. 3, 2018.
4. **Online Reduction of Artifacts in EEG of Simultaneous EEG-fMRI Using Reference Layer Adaptive Filtering (RLAF).** / Steyrl D; Krausz G; Koschutnig K; Edlinger G; **Müller-Putz G*** Brain topography, 09.11.2017.
5. **Composing only by thought: Novel application of the P300 brain-computer interface.** / Pinegger A; Hiebel H; Wriessnegger SC; **Müller-Putz G*** PLoS ONE, 06.09.2017.
6. **EEG neural correlates of goal-directed movement intention.** / Pereira J; Ofner P; Schwarz A; Sburlea AI; **Müller-Putz G*** NeuroImage, Vol. 149, 01.04.2017, p. 129–140.
7. **EEG oscillations are modulated in different behavior-related networks during rhythmic finger movements.** / Seeber M; Scherer R; **Müller-Putz G*** The journal of neuroscience, Vol. 36, No. 46, 2016, p. 11671-11681.
8. **BNCI Horizon 2020: Towards a Roadmap for the BCI Community.** / Brunner C; Birbaumer N; Blankertz B; Guger C; Kübler A; Mattia D; Millán, JdelR.; Miralles F; Nijholt A; Opisso E; Ramsey N; Salomon P; **Müller-Putz G*** Brain-computer interfaces, Vol. 2, No. 1, 2015, p. 1-10.
9. **Towards non-invasive Hybrid Brain-Computer Interfaces: framework, practice, clinical application and beyond.** / **Müller-Putz G***; Leeb R; Tangermann M; Höhne J; Kübler A; Cincotti F; Mattia D; Rupp R; Müller K-R; Millán JdelR Proceedings of the IEEE, Vol. 103, No. 6, 2015, p. 926-943.
10. **EEG-based neuroprosthesis control: A step towards clinical practice.** / **Müller-Putz G**; Scherer R; Pfurtscheller G; Rupp R Neuroscience letters, Vol. 382, 2005, p. 169-174.

10 most important additional research achievements

1. Invited Talks and Keynotes (selected):

ICCHP 2018, IFESS 2018, Winter BCI Conf 2018, NeuroIS 2017, nextM 2017, Austrian Computer Science 2016/2014, PhyCS 2014, BBCI Workshop 2012, AAAS 2011, Europ. NeuroRehab Cong 2011….

2. Organization of Conferences, Workshops:

2002, 2004, 2006 Organization of the 1st, 2nd, 3rd Int. Brain-Computer Interface Workshop and Training Course / 2008, 2011, 2014, Chair & Organization of the 4th, 5th, 6th Int. Brain-Computer Interface Workshop and Training Course / 2016 Workshop @ BCI Meeting / 2017, 2019 Chair & Organization of the 7th, 8th Graz BCI Conference /2018 Workshop @ BCI Meeting / 2019 Chair & Organization of CYBATHLON BCI Series 2019, Graz

3. National Projects:

- 2014 HTI Land Steiermark, EEG@Wachkoma, collaboration with Albert Schweitzer Hospital, 178,000,- Euro
- Brain-Computer Interface for Neuroprostheses Control, (Wings for Life – Spinal Cord Research Foundation), I (2006), II(2008), III (2009)

4. **EU projects in FP7:**

- Partner TOBI (Tools for Brain-Computer Interaction; 2008-2012; Budget, Total: € 12 million, TUG: € 961.000,-)
- Partner Decoder (Deployment of Brain-Computer Interfaces for the Detection of Consciousness in Non-Responsive Patients; 2010-2013; € 2.8 million/ € 319.000,-)
- Partner BrainAble (Autonomy and social inclusion through mixed reality Brain-Computer Interfaces: Connecting the disabled to their physical and social world; 2010-2013; € 3 million/ € 418.000) (responsible for the final phase.)
- Partner Better (Brain-Neural Computer Interaction for Evaluation and Testing of Physical Therapies in Stroke Rehabilitation of Gait Disorders; 2010-2013; € 3.2 million/ € 357.000) (responsible for the final phase.)
- Partner ABC (Augmented BNCI Communication; 2011-2014; € 2.4 million/ € 400.000)
- Partner BackHome (Brain-neural computer interfaces on track to home – Development of a practical generation of BNCI for independent home use; 2012-2015; € 3.1 million/ € 666.000)
- Coordinator BNCI Horizon 2020 (The Future of Brain/Neural Computer Interaction: Horizon 2020), 2013-2015; € 949.000/ €143.000,-

5. **EU projects in Horizon 2020:**

- Coordinator MoreGrasp (Restoration of upper limb function in individuals with high spinal cord injury by multimodal neuroprostheses for interaction in daily activities), 2015-2018; € 3 471 453 / €675 744,-
- Coordinator ERC Consolidator Grant "Feel Your Reach", 2016-2021, 2 Mio Euro.

Important Awards

6. **ERC Consolidator Grant (ERC-2015-CoG, 681231) "Feel Your Reach"**

7. **Ludwig-Guttmann-Preis** (20.5.2017), Deutsche Medizinische Gesellschaft für Paraplegie (German Medical Society for Spinal Cord Injury)

8. **Phd supervision**

PhD supervisor ongoing: Ongoing: Patrick Ofner, Andreas Pinegger, Andreas Schwarz, Joana Pereira, Catarina Lopes Dias, Reinmar Kobler, Lea Hehenberger, Jonas Ditz
Finalized: David Steyrl (11/2018), Christian Breitwieser (09/2017), Martin Seeber (03/2017) / Christoph Pokorny (02/2017) / Petar Horki (04/2016) / Josef Faller (10/2015) / Alex Kreilinger (08/2015) / Martin Billinger (01/2015)

9. **Editor activity:**

Editor in Chief of Special Issue in Proceedings of the IEEE "The Plurality of Human Brain-Computer Interfacing" / Associate Editor IEEE Transactions on Biomedical Engineering / Associate Editor Journal of Brain-Computer Interfacing / Review Editor, Frontiers in Neuroprosthetics

10. **Membership in scientific societies:**

Austrian Society for Medical and Biomedical Engineering(ÖGMBT)
INGE-ST Initiative Gehirnforschung Steiermark (Styrian Society for Brain Research)
BCI Society (Board of Directors), Founding Member
International Functional Electrical Stimulation Society (ifess), Founding Member
Member of the IEEE, and IEEE EMBS
Member of the Society of Neuroscience
Society for NeuroInformation Systems, Deputy Scientific Director, Founding Member