# Scientific Curriculum Vitae

## Teufl Wolfgang, M.Sc.

## Scientific careere

### BSc Physiotherapy

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| 30/08/2009-03/07/2012 | BSc course physiotherapy at FH Campus Wien, Austria |
| BSc Thesis | „The effect of sEMG-feedback on asymmetries in the spatio-temporal parameters, during treadmill walking“ |

### MSc „Biomechanics-Motor activity-Movement analysis“

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| 10/2013 – 05/02/16 | MSc course “Biomechanics-motor activity-movement analysis” at the Justus Liebig Universität Gießen / Technische Hochschule Mittelhessen, Germany |
| MSc Thesis | „Biomechanical Quantification of the Dynamic Knee Valgus using inertial sensor system Myo Motion®“ |

### PhD candidate and research associate at the TU Kaiserslautern, Germany

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| 02/2017 – 09/2020 | PhD candidate at the department of Sport Science at the TU Kaiserslautern |
| PhD Thesis | “Validation and Initial Applications of a Magnetometer-free Inertial Sensor Based Motion Capture System for the Human Lower Body” |
| 24/09/2020 | Graduation: Dr. rerum naturalium (Dr. rer. nat.), summa cum laude |

## Academic working experience

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| 02/2017 – 06/2018 | scholarship holder at the TU Kaiserslautern, department of computer science |
| 06/2018 – 08/2020 | research associate at the TU Kaiserslautern, department of computer science |
| 10/2020 – present | Senior Scientist at the University of Salzburg, department of sport science |

## List of publications

### Conference papers / presentations

1. Teufl, W.; Konrad, P.; Subke, J. P57: 2D video Frontal Plane Projection Angle and 3D inertial sensor based assessment of Dynamic Knee Valgus. A Comparison. *ESMAC* **2017** Trondheim, doi:10.1016/j.gaitpost.2017.06.418.

2. Steffen, D.; Christmann, C.; Teufl, W.; Bleser, G. No Game, No Pain?: Towards a Mobile Exergame for Rehabilitation. *In Proceedings of the Extended Abstracts Publication of the Annual Symposium on Computer-Human Interaction in Play* **2018** New York, doi: http://doi.acm.org/10.1145/3130859.3131310

3. Teufl, W.; Miezal, M.; Taetz, B.; Fröhlich, M.; Bleser, G. Limits of agreement between a magnetometer-independent inertial sensor system and a marker based optical motion capture system for 3D joint kinematics in gait analysis. *ECSS* **2018** Dublin.

4. Teufl, W.; Miezal, M.; Taetz, B.; Fröhlich, M.; Bleser, G. Validity of spatial gait parameters based on an inertial sensor system for 3D gait analysis. 12. *Spinfortec* **2018** Garching.

5. Teufl, W.; Miezal, M.; Taetz, B.; Fröhlich, M.; Bleser, G. Towards a wearable feedback system for gait training: Inertial sensor based 3D joint kinematics and spatio-temporal parameters. *GEST19 DVS Tagung* **2019** Würzburg.

6. Teufl, W.; Taetz, B.; Fröhlich, M.; Bleser, G. Accuracy and repeatability of the "neutral-zero position" of the lower extremity. *ISB/ASB* **2019** Calgary.

7. Teufl, W.; Taetz, B.; Weidmann, A; Fröhlich, M.; Bleser, G. Validity of a depth camera based approach for segment length estimation. *ISB/ASB* **2019** Calgary.

8. Teufl, W.; Taetz, B.; Miezal, M.; Lorenz, M.; Pietschmann, J.; Jöllenbeck, T.; Fröhlich, M.; Bleser, G. Auf dem Weg zu einem mobile, inertialsensorbasierten Feedbacksystem zum Gangtraining für Patienten nach Hüft-TEP. *GAMMA Workshop* **2019** Wien.

### Peer-reviewed journal papers

1. Teufl, W.; Miezal, M.; Taetz, B.; Fröhlich, M.; Bleser, G. Validity, Test-Retest Reliability and Long-Term Stability of Magnetometer Free Inertial Sensor Based 3D Joint Kinematics. *Sensors* **2018**, 18, 1980. doi:10.3390/s18071980.

2. Teufl, W.; Lorenz, M.; Miezal, M.; Taetz, B.; Fröhlich, M.; Bleser, G. Towards Inertial Sensor Based Mobile Gait Analysis: Event-Detection and Spatio-Temporal Parameters. *Sensors* **2019**, *19*, 38. doi: 10.3390/s19010038.

3. Teufl, W.; Miezal, M.; Taetz, B.; Fröhlich, M.; Bleser, G. Validity of inertial sensor based 3D joint kinematics of static and dynamic sport and physiotherapy specific movements. *PLOS ONE* **2019**, 14. doi: https://doi.org/10.1371/journal.

4. Taetz, B.; Teufl, W.; Weidmann, A.; Pietschmann, J.; Jöllenbeck, T.; Bleser, G. Depth camera based statistical shape fitting approach for the creation of an individualized lower body biomechanical model: validity and reliability. *Computer Methods in Biomechanics and Biomedical Engineering* **2019**, 1–11, doi:10.1080/10255842.2019.1688310.

5. Teufl, W.; Taetz, B.; Miezal, M.; Lorenz; Pietschmann, J.; Jöllenbeck, T.; Fröhlich, M.; Bleser, G. Towards an Inertial Sensor-Based Wearable Feedback System for Patients after Total Hip Arthroplasty: Validity and Applicability for Gait Classification with Gait Kinematics-Based Features. *Sensors* **2019**, *19*, 5006, doi:10.3390/s19225006.