Stanford

Jennifer Maier

Postdoctoral Scholar, Mechanical Engineering

Bio

BIO

My research interests include a broad variety of topics, ranging from medical image analysis and signal processing, machine learning and artificial intelligence, which I mainly focused on during my Ph.D. research. As a member of the Digital Athlete project of the Wu Tsai Performance Allience, I am now pursuing research to investigate how we can use wearable sensors, machine learning and biomechanical simulations to improve athlete performance, prevent injuries and support rehabilitation after injury.

I completed my Bachelor of Science and Master of Science degrees in medical engineering from Friedrich-Alexander-University Erlangen-Nuernberg (FAU). In 2015, I worked on my master's thesis under the supervision of Prof. Kamiar Aminian during a research stay in the Laboratory of Movement Analysis and Measurement (LMAM), École Polytechnique Fédérale de Lausanne (EPFL), supported by a DAAD Scholarship. Afterwards, I pursued my Ph.D. at FAU in the Pattern Recognition Laboratory under the supervision of Prof. Andreas Maier and in the Machine Learning and Data Analytics Lab under the supervision of Prof. Bjoern Eskofier. I worked on projects in collaboration with Stanford University and the Universidade do Vale do Rio dos Sinos (UNISINOS) and conducted several short-term research stays at the partner universities. After finishing my Ph.D. in 2021, I joined Stanford University as a postdoctoral scholar advised by Prof. Ellen Kuhl.

INSTITUTE AFFILIATIONS

- Member, Wu Tsai Human Performance Alliance

STANFORD ADVISORS

- Ellen Kuhl, Postdoctoral Faculty Sponsor

Publications

PUBLICATIONS

- **Rigid and Non-rigid Motion Compensation in Weight-bearing CBCT of the Knee using Simulated Inertial Measurements.** *IEEE transactions on bio-medical engineering*
  Maier, J., Nitschke, M., Choi, J. H., Gold, G., Fahrig, R., Eskofier, B. M., Maier, A.
  2021; PP

- **3D Non-Rigid Alignment of Low-Dose Scans Allows to Correct for Saturation in Lower Extremity Cone-Beam CT** *IEEE ACCESS*
  Maier, J., Maier, A., Eskofier, B., Fahrig, R., Choi, J.
  2021; 9: 71821-71831

- **Feasibility of Motion Compensation using Inertial Measurement in C-arm CT**
  Maier, J., Aichert, A., Mehringer, W., Bier, B., Eskofier, B., Levenston, M., Gold, G., Fahrig, R., Bonaretti, S., Maier, A., IEEE
  IEEE.2018

- **Comparison of Different Approaches for Measuring Tibial Cartilage Thickness** *JOURNAL OF INTEGRATIVE BIOINFORMATICS*
  Maier, J., Black, M., Bonaretti, S., Bier, B., Eskofier, B., Choi, J., Levenston, M., Gold, G., Fahrig, R., Maier, A.
  2017; 14 (2)

- **Object Removal in Gradient Domain of Cone-Beam CT Projections**
  Bier, B., Berger, M., Maier, J., Unberath, M., Hsieh, S., Bonaretti, S., Fahrig, R., Levenston, M. E., Gold, G. E., Maier, A., IEEE
  IEEE.2016

- **Analog Non-Linear Transformation-Based Tone Mapping for Image Enhancement in C-arm CT**
  Shi, L., Berger, M., Bier, B., Soell, C., Roeber, J., Fahrig, R., Eskofier, B., Maier, A., Maier, J., IEEE
  IEEE.2016