

Scientific Program
Thursday March 8, 2018

Track A – AM 2

Track B – AM 3

8:30	Welcome			
		Biomedical Engineering I	Image Processing I	
		Chair: Prof. Stephan Klein	Chair: Dr. Alexander Neumann	
8:45	37	<i>M. Ziauddin, H. Kalb, S. Müller</i> Development of an Appropriate Temperature Profile for Brazing a 5-pole Feedthrough of Pacemakers	04	<i>D. Laule, J. Diesel, M.P. Heinrich</i> Occlusion Estimation in 3D Point Clouds using Visual Data from Home Care Scenarios
9:00	46	<i>F. Eckardt, I. Menn, S. Klein</i> Requirements for Tapes for Sensor Attachment to the Human Skin	38	<i>P. Merks, J. Hagenah, A. Schweikard</i> Automated landmark refinement in 3D ultrasound images of the aortic root
9:15	67	<i>S. Schmees, M. Meyer, P. Rostalski</i> Optimization of the Inspiratory and Expiratory Controller of an Innovative Anesthesia Device	55	<i>M. Sambale, M. Heinrich, D. Sciretti, N. Trujillo</i> Low-Rank Mask R-CNN
9:30	85	<i>F. Spieß, J. Graßhoff, E. Petersen, P. Rostalski</i> Detection of Patient Ventilator Asynchrony based on Surface Electromyography	79	<i>J. Wessel, M. P. Heinrich</i> Multiple Landmark Localization in medical CT Scans using Deep Neural Networks with Heatmap Regression
9:45	05	<i>H. Kettner and S. Klein</i> Critical evaluation of gaps within the cobas m 511 hematology analyzer parameter portfolio	26	<i>N. Hampe, U. Katscher, A. Neumann</i> Performance enhancement of dictionary-based electrical properties tomography
10:00	57	<i>M. Keßler, J. Mody</i> Directional Hearing in clinical everyday life with the ERKI system of the company Auritec	42	<i>J. Sauer, O. Schmidt, F. Kaiser, T. M. Buzug</i> Automated defect recognition on X-ray images of aluminium castings based on change detection algorithms
10:15	Coffee Break			
		Biomedical Engineering II	Image Processing II	
		Chair: Dr. Christian Damiani	Chair: Prof. Heinz Handels	
10:30	53	<i>N. Manjunath Swamy</i> A model to estimate pressure within a syringe from the corresponding force applied on the piston	61	<i>C. Schareck, T. H. Oechtering, A. Frydrychowicz, M. A. Koch</i> Development of a graphic user interface and cross manufacturer adaptation of a program for determining the pulse wave velocity in the aorta from phase-contrast magnetic resonance images
10:45	86	<i>T. Kohlfärb, N. Linz, P.-C. Huang, S. A. Boppert</i> Investigation of OCT phase fluctuations correlated with neuronal activity and measurements of mechanical and optical properties in rodent brain tissue	82	<i>P. Huß, M. Schaar, M. Rafecas</i> Statistical Iterative Reconstruction Including Triple Coincidences for a Two-Layer Small Animal PET Scanner

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| 11:00 | 90 | <i>R. Hillgruber</i>
Analysis of blood pressure data of children receiving general anesthesia to investigate the feasibility of creating age-specific reference values |
| 11:15 | 03 | <i>S. Sharif, S. Puttfarken, S. Müller</i>
Development of an electromagnetic compatible SpO2-simulator for the use with pulse oximeters |
| 11:30 | 06 | <i>M. Stender</i>
Development of a Simulation Module for a Synchronized Multi-Robot System Using the Simulation Software KUKA.Sim Pro for Supporting Process Validation |
| 11:45 | 29 | <i>I. Ryan, R. Wendlandt</i>
Robust evaluation of timing parameters in the gait cycle |

12:00 **Lunch**

Biomedical Engineering III
Chair: Prof. Stefan Müller

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| 13:00 | 32 | <i>M. Saathoff, C. Koester, C. Wendt</i>
Investigation of corona treatment to enhance adhesion of silicone on PUR-films |
| 13:15 | 59 | <i>C. Borchert, C. Nehls, T. Gutschmann</i>
Study of Antimicrobial Effects of the Fungal Toxin Candidalysin by Atomic Force Microscopy |
| 13:30 | 76 | <i>B. Akinola, J. Baudewig, S. Boretius, M. A. Koch</i>
The Hemodynamic Response Function in Functional Magnetic Resonance Imaging: Variability Between Brain Regions and Differences Between Rats and Humans |
| 13:45 | 81 | <i>J. Bouchagiar, A. Höfer, M. Horn, M. Kleemann</i>
Development and evaluation of a test and training environment for endovascular aortic procedures using rapid prototyping as part of NAV-EVAR project |
| 14:00 | 92 | <i>N. Tadrissi Parsa, C. Wuertele, S. Wuerzbürger, M. Ryschka</i>
Comparison between Piezoelectric Actuator and Brushless Motor for Insulin Delivery |
| 14:15 | 10 | <i>A. Cameron, H. Wang, C.-X Zhao</i>
Investigating Nanoparticles' Permeability using a Tumor-Microenvironment-on-a-Chip |

Track B – AM 3

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| 33 | <i>K. Zantop, N. Kartalis, M. Heinrich, R. Moreno</i>
Influence of Affine Image Registration on the Calculation of Diffusion Properties with a Kurtosis Model in Diffusion Weighted Imaging |
| 54 | <i>N. Ghanad Poor, J. Lotz, M. Kleint</i>
Automated detection of vesicles in electron microscope images by using deep convolutional neural networks |
| 71 | <i>M. Maus, T. Parbs, A. Mertins</i>
A Convolutional Autoencoder for Motion Field Compression |
| 91 | <i>N. Bouteldja, M.P. Heinrich</i>
Deep 3D Encoder-Decoder Networks with Applications to Organ Segmentation |

Medical Imaging

Chair: Prof. Thorsten M. Buzug

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| 09 | <i>J. Sprenger, S. Reimers-Kipping, D. Schäfer, T. Witter</i>
Automated Lesion Detection with Neural Networks using Preprocessed Images in Transfer Learning |
| 47 | <i>L. Bannoura, A. Cordes, T. M. Buzug</i>
A Comparison Study on MPI Reconstruction Methods for Multidimensional Lissajous-based Data-Acquisition Schemes |
| 16 | <i>D. Wulff, S. Maur, T. M. Buzug</i>
Sinogram modeling for patient motion detection in dental Cone Beam CT |
| 66 | <i>M. Fleitmann, M. Seebaß, M. Westerhoff, D. Stalling, M. Heinrich, M. Blendowski</i>
Classification of axial CT Images using Deep Learning for determining a Standard Coordinate System |
| 28 | <i>S. Seeger, M. Zvolsky, C. Schmidt, M. Rafecas</i>
Towards PET-CT Imaging of Fish: Development of a Dedicated Holder and a Digital Phantom |

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14:30		Coffee Break	
		Biomedical Engineering IV Chair: Prof. Philipp Rostalski	Signal Processing Chair: Prof. Alfred Mertins
14:45	17	<i>D. Kleinewalter, J. Börner, T. Rahlf, P. Rostalski</i> Gain-Scheduled PI Controller Design for PEEP-Valve Control in an Anaesthesia Device	12 <i>A. Wiggers, L. Fornasiero, H. Botterweck</i> Detection of Acoustic Alarms in Industrial Environment
15:00	30	<i>M. Bodrova, A. Kopp</i> Cell Adhesion on Titanium Surfaces after Modification by Plasma Electrolytic Oxidation and Sol-gel Coating	68 <i>V.-M. Gerant, F. Gassenmeyer, A. Mertins, H. Husstedt</i> Automated analysis of ear canal geometries
15:15	52	<i>U. Malik, M. Kebbach, R. Wendlandt, D. Klüß, R. Bader</i> Development of Subject Specific Musculoskeletal Model of the Lower Extremity after Total Knee Replacement	35 <i>H. Siebert, M.-F. Uth, A. Mertins</i> Pulse detection in video sequences acquired with a thermographic camera using MIT's Eulerian Video Magnification
15:30	63	<i>A. Medrea, P. Klemm, T. Senkbeil, P. Cörlin</i> Magnetic fields generated by planar coils with potential usage towards medical applications	73 <i>H. AbdelRahman, F. Katzberg, T. Parbs, A. Mertins</i> Sampling and Interpolation of Sound Fields
15:45	77	<i>D. Weller, L. Hansen, M. Blendowski, M. Heinrich</i> Transferring a Deep Cityscape Synthesis Approach to the Medical Domain	48 <i>L. Kleinhans</i> Evaluation of the Simple Open EtherCAT Master for the communication in a modular medical device
18:00		Conference Dinner	