Monday, July 7

Time Slot	Event Type	Details
13:00 -16:00	Registeration	
15:30-17:00	Welcome reception	Gathering, drink and snack, going togheter to Heinerfest

Tuesday, July 8

Time Slot	Event Type	Details	
8:30-9:30	Registeration	Gathering, coffee and registration	
9:30-10:00	Conference Opening	Welcome, short talk, and introduction	
10:00-11:00	Plenary Talk 1	Daniel Ferris, University of Florida	Robotic exoskeletons, bionic prostheses, and immersive virtual reality as tools to better understand brain and body connections
11:00-11:30	Coffee Break		

Oral Session 1 — Chair: David Remy (11:30-13:00)

Time	Title	Authors
11:30 -11:43	Decoding the Interplay Between Central and Peripheral Control for Versatile Locomotor Repertoire in Centipedes	Kotaro Yasui, Emily M. Standen, Takeshi Kano, Hitoshi Aonuma, Akio Ishiguro
11:43 - 11:56	How Leg Stiffness Affects Energy Economy in Hopping	Iskandar Khemakhem, Dominik Tscherernjak, Maximilian Raff, David Remy
11:56 -12:09	Cortical Activity as a Marker for User Preference in Exoskeleton Personalization	Morteza Khosrotabar, Asghar Mahmoudi, Maziar Sharbafi
12:09 - 12:22	Role of stretch feedback when swimming inside a vortex street	Alexandros Anastasiadis, Astha Gupta, Karen Mulleners, Auke Ijspeert
12:22 -12:35	The Role of Trunk Mechanics in Uphill and Downhill Walking: A Simulation and Experimental Study	Vahid Firouzi, Johanna Vielemeyer, Oskar Stryk, Roy Müller
12:35 - 12:48	The Influence of Wing and Tail Morphology on the Aerodynamics of Gliding Mammals	Liming Zheng, Baihui Chen, Alexander van Zuijlen, Salua Hamaza
12:48 -13:00	Integrating simulated muscle reflexes with volitional inputs to enhance lower-limb EMG-control	Matthias Voß, Philipp, Beckerle

Time Slot	Event Type	Details	
13:00-14:00	Lunch Break		
14:00-14:30	Keynote Speaker 1	Klaus Gramann, TU Berlin	Imaging the Human Brain in Real and Virtual Worlds
14:30-15:00	Keynote Speaker 2	Madhusudan Venkatesan, Yale University	The human foot
15:00-15:40	Panel Discussions	Daniel Ferris, Klaus Gramann, Madhusudan Venkatesan, Emily Standen, Gregory Sawicki	
15:40-16:00	Coffee Break		
16:00-18:00	Workshops 1 / Workshop 2	MoBI - Mobile Brain and Body Imaging (room 164) / Bioinspired Actuators (Auditorium)	

Wednesday, July 9

Time Slot	Event Type	Details	
8:30-9:30	Plenary Talk 2	Helen Huang, UNC	Towards Human-Prosthesis Symbiosis
9:30-10:10	Poster Pitch	Order from 1 to 26 (60 sec each)	
10:10-10:30	Coffee Break		

Oral Session 2 — Chair: Martin Grimmer (10:30-12:00)

Time	Title	Authors
10:30 -10:43	Rapid Human-in-the-Loop Optimization for Hip Exoskeleton Assistance During Walking: An EMG-based Approach	Guoping Zhao, Martin Grimmer, Xingsong Wang, André Seyfarth
10:43 - 10:56	Natural Human Biomechanical Adaptation Behavior during the Active Ankle Exoskeleton-Assisted Locomotion	Peter Seungjune Lee, Katja Mombaur
10:56 -11:09	Passive exoskeletons may simultaneously augment stability, agility and efficiency of cyclic movement	Laksh Kumar Punith, Gregory S. Sawicki
11:09 – 11:22	Concerted Control Framework for Gait Generation Across Models of Varying Complexity	Omid Mohseni, André Seyfarth, Maziar Sharbafi
11:22 -11:35	Validating Predictive Simulations for Wearable Assistive Device Optimization: A Case Study on a Passive Biarticular Exosuit	Asghar Mahmoudi, Vahid Firouzi, Stephan Rinderknecht, Maziar Sharbafi
11:35 - 11:48	Enhancing Preferred Walking and Transition Speeds With an Active Biarticular Soft Exosuit	Arjang Ahmadi, Vahid Firouzi, Dennis Haufe, Andre Seyfarth, Maziar Sharbafi
11:48 -12:00	Partial Gait and Balance Assistance via a 3D Path Controller	Zeynep Ozge Orhan, Auke Ijspeert, Mohamed Bouri

Time Slot	Event Type	Details	
12:00-13:30	Lunch Break		
13:30-14:00	Keynote Speaker 3	Poramate Manoonpong VISTEC, Thailand, SDU Denmark	Bio-inspired Neural Control with Online Adaptation for Personalized Locomotion Assistance of Interactive Exoskeletons
14:00-14:30	Keynote Speaker 4	Jan Veneman Hocoma	Applying Robotics to Rehabilitate and Support Human Mobility
14:30-15:10	Panel Discussions	Helen Huang, Poramate Manoonpong, Jan Veneman, David Remy, Herta Flor	
15:10-15:30	Coffee Break		
15:30-17:30	Workshop 4, Workshop 5, Tutorial 1	Central vs. Distributed Movement Control (Auditorium) / LokoAssist (room 15) / MPC in Robotics (room 164)	

Poster Section (16:30-18:30)

Poster ID	Title	Authors
1	Is the Muscle Spindle a Length Sensor? A Model of Extrafusal Muscle Length Control Based on Intrafusal Muscle Force	Yoichi Masuda, Masahiro Ishikane, Masato Ishikawa
2	Active Gait Rehabilitation using Inverse Reinforcement Learning	Zongwei Zhang, Michael Drolet, Firas Al-Hafez, Sebastian Hirt, Jan Peters
3	Magnetic Field-Based Foot Sensor for Legged Robots	Sanhanat Lertvittayavivat, Dhamdhawach Horsuwan, Rujikorn Charakorn, Worasuchad Haomachai, Poramate Manoonpong
4	Magnetically Controlled 3D-Printed Structures for Soft Robotics and Biomedical Applications	Muhammad Bilal Khan, Kilian Schäfer, Denys Makarov, and Oliver Gutfleisch
5	Real-Time Gait Phase Estimation Based on Textile Integrated Ferroelectrets and Adaptive Oscillators	Julian Seiler, Mark Suppelt, Ruth Wilhelm, Philipp Beckerle, Mario Kupnik
6	Perturbation Recovery in Human Hopping	Aida Mohammadi Nejad Rashty
7	Walking in Virtual Reality - How the Attendance of an Avatar and the Feeling of Embodiment Influence Human Gait	Gregor Schwinn, Maximilian Alexander Stasica, André Seyfarth
8	Co-contraction Share Analyses to Understand Human Reaction to Lateral Angular Perturbation during Walking	Smilja Stokanović, Omid Mohseni, Maziar Sharbafi, André Seyfarth, Heike Vallery, Nadica Miljković
9	Joint Kinematics as Predictors of Metabolic Response to Passive Exosuits	Vahid Firouzi, Oskar Stryk, Maziar Ahmad Sharbafi
10	An approach for reconstructing dinosaur locomotion using physical skeletal platforms	Kazuki Ito, Kaito Kimura, Kentaro Chiba, Tsukasa Okoshi, Yasuhiro Sugimoto, Damdinsuren Idersaikhan, Tetsuya Kinugasa, Koichi Osuka
11	Combined Learning of Exoskeleton Mid-level Assistance Profiles and Low-level Control Parameters	Sebastian Hirt, Mustafa Kamal, Maziar Sharbafi, Michael Drolet, Rolf Findeisen
12	Unraveling Robust Locomotion: How Monoarticular and Biarticular Muscle Enhance Perturbation Recovery in Hopping	Marc Murcia i Matute, Maziar Sharbafi, Omid Mohseni, André Seyfarth, Gregory S. Sawicki
13	Parametric study for continuous quasi-passive walking of a musculoskeletal humanoid robot with anatomy trains	Hiroki Nishii, Hisashi Ishihara, Yusuke Tsunoda, Teruyo Wada, Koichi Osuka
14	The Relationship of Psychological and Behavioural Factors and Prosthesis Satisfaction in Daily Life: A Pilot Case Study	Zahra Abbasi, Angela Serian, Maren Prignitz, Frauke Nees, Herta Flor
15	The Unique Ankle Articulation of Avimimus: Examining Its Potential Existence Through Robotic Modeling	Tetsuya Kinugasa, Hikaru Nakamura, Kentaro Chiba, Tsukasa Okoshi, Ryota Hayashi, Koji Yoshida, Buuvei Mainbayar, Khishigjav Tsogtbaatar
16	Learning Robot Locomotion from Diverse Datasets	Lu Liu, Michael Drolet, Oleg Arenz, Jan Peters
17	Muscle Activity Characteristics Between Correct and Incorrect Bodyweight-Squats	Dennis Haufe, Arjang Ahmadi, Sebastian Dill, Daniel Fener, Martin Grimmer, Luise Herrmann, Yanhua Zhao, Andre Seyfarth, Christoph Hoog Antink, and Maziar Ahmad Sharbafi
18	Body Schema Integration and Emotions: The Effect of Valence and Emotional Arousal on the Body Schema Integration Process	Otilia Pasnicu, Sushian Alipanahifard
19	Assessment of Perceived-Embodiment of Prostheses using Virtual Limbs: A Study Protocol	Jennifer Raynaud, Herta Flor, Kornelius Kammler-Suecker, Julian Seiler, Mario Kupnik
20	On the Importance of Muscle Activity for an Exoskeleton to Rehabilitate Temporomandibular Disorders	Paul-Otto Müller, Oskar Stryk
21	Techniques and Compensatory Strategies of Prosthetic Users	Diana Cervera, André Seyfarth
22	Simulating locomotion under anatomical and mechanical constrains	Omer Yuval, Avi Amir, Elad Ozeri, Lena Litti, Amir Ayali
23	Functional Electrical Stimulation in Adults with Neurological Impairments – short- vs. long-term effects	Niklas Bleichner
24	Concurrent evolution of sensorimotor functions and musculoskeletal system in mammals	Hiroshi Kimura
25	A Hydraulic Powered Ankle-Foot Prosthesis with Adjustable Nonlinear Stiffness	Bowen Li, Yulong Xiong, Qitao Huang
26	Strategies and Compensatory Movements of Athletes with Disabilities	Diana Cervera, Tobias Welchar
27	Development of Deep Biomimetic Quadruped Robot with Bow-string Structure in Cursorial Mammals	Akira Fukuhara, Megu Gunji, Yoichi Masuda, Yasuji Harada, Akio Ishiguro, Koichi S...

Robot Zoo

Title	Short description	Presenter Names
1-DOF Knee Exoskeleton	Knee exoskeleton with PAM and EEG for user evaluation study	Morteza Khosrotabar, M. A. Sharbafi
EPA Walker Balance	Bipedal robot with PAMs and gyroscope to study standing balance under perturbations	Marc Murcia, Jitong Yang, M. A. Sharbafi
Redundant PAM Mono-leg	Mono-legged PAM robot replicating human leg with biarticular actuation	Yelin Jiang, M. A. Sharbafi, R. Findeisen
Biomimetic Quadruped	Flexible trunk quadruped robot with bow-string structure for mammal-like motion	Akira Fukuhara et al.
Bio-inspired Open Knee Joint	Robot knee joint mimicking ligaments and 3D motion with spherical surface contact and tendon-driven actuation	Shinsuke Nakashima, Yilun Sun, Julius Ambros, Christoph Rehekampff, Qi An, Atsushi Yamashita, Tim C. Lueth
Powered Ankle-Foot Prosthesis	A Hydraulic Powered Ankle-Foot Prosthesis with Adjustable Nonlinear Stiffness	Bowen Li, Yulong Xiong, Qitao Huang
BATEX: A Soft Biarticular Exosuit	Arjang Ahmadi, Vahid Firouzi, Dennis Haufe, Andre Seyfarth, Maziar Ahmad Sharbafi	BATEX: A Soft Biarticular Exosuit for Hip and Knee Joint Assistance

Time Slot	Event Type	Details
18:30 - 19:00	Travel to dinner	
19:00 - 22:00	Banquet	

Thursday, July 10

Time Slot	Event Type	Details	
8:30-9:30	Plenary Talk 3	Thorsten Zander, BTU	What is Neuroadaptive AI and Why Will It Change Much More Than You Think?
9:30-10:10	Poster Pitch	Order from 1 to 25 (60 sec each)	
10:10-10:30	Coffee Break		

Oral Session 3 — Chair: Guoping Zhao (10:30-12:00)

Time	Title	Authors
10:30 -10:43	Learning Robot Locomotion for Multiple Embodiments	Nico Bohlinger, Grzegorz Czechmanowski, Maciej Piotr Krupka, Piotr Kicki, Krzysztof Walas, Jan Peters, Davide Tateo
10:43 - 10:56	Ground Reaction Force-based Joint Stiffness Modulation for Generating 3D Bipedal Walking	Shunsuke Koseki, Omid Mohseni, Mitsuhiro Hayashibe, Maziar Sharbafi, André Se...
10:56 -11:09	Neural mechanisms of intersegmental coordination: CPGs, sensory feedback, and mechanical coupling in the spinal-transected Anguilla rostrata	J. Hainer, K. Lutek, E.M. Standen
11:09 - 11:22	Optimizing Human Gait by Reducing Metabolic Cost with Imitation Learning	Nadine Drewing, Firas Al-Hafez, Maziar Sharbafi, André Seyfarth
11:22 -11:35	Learning from Bees: Transferring Navigation Behavior in Animals to Robot Control	Abhi Veda, Matthew Garratt, Mandyam Srinivasan, Sridhar Ravi
11:35 - 11:48	Silkmoth-inspired Adaptive Sensing Control for Odor Source Localization of Walking Robots	Jettanan Homchanthanakul, Shunsuke Shigaki, Poramate Manoonpong
11:48 -12:00	A Framework for Online Human-Exoskeleton Activity Classification and Gait-Lab Control: Towards Automated Gait Rehabilitation	Natchaya Sricon, Matas Manawakul, Run Janna, Kanut Tarapongnivat, Sampoom Punapanont, Chaicharn Akkawutvanich, Poramate Manoonpong

Time Slot	Event Type	Details	
12:00- 13:30	Lunch Break		
13:30- 14:00	Keynote Speaker 5	Sangbae Kim, MIT	Physical intelligence and Cognitive Biases Toward AI
14:00-14:30	Keynote Speaker 6	Katja Mombaur, KIT & University of Waterloo, Canada	Endowing humanoid robots with embodied intelligence: the roles of bio-inspiration, optimization and learning
14:30- 15:10	Panel Discussions:	Thorsten Zander, Sangbae Kim, Katja Mombaur, Auke Ijspeert, Oskar vonStryk	
15:10 -15:30	Coffee Break		
15:30-17:30	Workshop 2, Workshop 6, Tutorial 2	Whitebox (room 15), Movement Academy (room 164), LocoMujocoCo (room 204)	

Poster Section (16:30- 18:30)

Poster ID	Title	Authors
1	Exploring the Feldenkrais Method® as a Tool to Improve the Human Movement Quality	Eisa Alokla, Roger Russell, Andr´e Seyfarth, Maziar Ahmad Sharbafi
2	Neural Control for Soft Robot Terrestrial-Aquatic Locomotion	Naris Asawalertsak, Poramate Manoonpong
3	Kinematic alterations for users of lower-limb prosthetics during vertical ground perturbations	Christine Burgard, Maximilian Stasica, André Seyfarth
4	Agency in Continuous Control	Kai Streiling, Viktoria Penaz, Loes C.J. van Dam
5	Analysis of Body Parameters' Effects on Various Gaits in Locusts	Yasuhiro Sugimoto, Jun Fukui, Keisuke Naniwa, Daisuke Nakanishi, Koichi Osuka
6	Adaptive behavior to sensory organ defect in an insect analyzed by a constructive approach	Shunsuke Shigaki, Keisuke Yokota, Ryoko Sekiwa, Dai Owaki
7	Analysis of Inter-leg Coordination Mechanisms in Cricket gait: Insights from Thoracic Ganglion Network Transection	Yasuhiro Sugimoto, Hiromi Togawa, Keisuke Naniwa, Daisuke Nakanishi, Koichi Osuka
8	Aminergic control of decision to fight or flee in the trap-jaw ants	Hitoshi Aonuma, Takuto Kikuchi, Kanna Matsumoto
9	Experimental verification of scalable sheepdog-type swarm robot navigation using farthest-agent targeting control	Yusuke Tsunoda, Naoki Korekawa, Natsuki Kawaguchi, Takao Sato
10	Neural Hebbian plastic control network for adaptive locomotion	Worasuchad Haomachai, Rujikorn Charakorn, Poramate Manoonpong
11	Decentralized Intra-Limb Coordination Mechanisms Toward Whole-Body Coordinated Quadruped Locomotion	Seokhyun Kim, Goku Sawada, Satoshi Maeda, Shoei Hattori, Shura Suzuki, Kotaro Yasui, Akio Ishiguro
12	Decentralized Control Mechanism for Adaptive Locomotion in Centipedes: Transition Between Walking and Peristalsis	Daisuke Akai, Yusei Sugiyama, Kotaro Yasui, Akio Ishiguro
13	Improving Locomotion Learning Efficiency of CPG-RBF networks Under Morphological Damage With Multiple Value Functions	Chayapol Hansanelak, Rujikorn Charakorn, Worasuchad Haomachai, Poramate Manoonpong
14	Deep Biomimetic Printing\Using Fiber Embedding and Sponge Ossification	Ayano Michikawa, Siyuan Tao, Yoichi Masuda, Megu Gunji, Akira Fukuhara, Hiroyuki Nabae, Yasuji Harada, Koichi Suzumori
15	Walk-Trot-Gallop Transition with Spinal Flexion in a Quadruped Model	Shura Suzuki, Goku Sawada, Kotaro Yasui, Akira Fukuhara, Akio Ishiguro
16	Decentralized Control for Morphology-Adaptive Gait Generation in Sprawling Quadruped Locomotion	Shura Suzuki, Satoshi Maeda, Kotaro Yasui, Akio Ishiguro
17	Simple Cellular Automaton Model for Understanding Caterpillar Swarm Locomotion	Shura Suzuki, Keisuke Naniwa, Masato Ishikawa, Akio Ishiguro
18	Dynamics of exploratory movement: The case of Braille reading	Tetsushi Nonaka
19	Automated Evaluation of Anisotropic Friction Pads	Anastázie Rišková, Jiří Kubík, Jan Faigl
20	Inchworm-like Robot Locomotion using Off-the-Shelf 3D-printable Anisotropic Friction Pads	Jiří Kubík, Anastázie Rišková, Jan Faigl
21	Flapping Propulsion Dynamics: Influence of Motion Composition on Thrust and Efficiency	Bluest Lan
22	Aerodynamic Tails for Stability and Control of Dynamic Tetrapedal Locomotion	Ardian Jusufi, Robert Baines, Marco Hutter, Yuntao Ma, ziyou wu, Felix Winghart
23	Head control of a 3DoF robot arm using Visual-SLAM and IMU inspired by head-bobbing in birds	Kiyofumi FUJINO, Ryuma Niiyama
24	Hind-leg autonomy alters aggressive behavior in the cricket Gryllus bimaculatus	Akihisa MURATA, Hitoshi AONUMA
25	On the Role of Hierarchies, Abstractions, and Representations of Dynamics in Animal and Machine Learning	Steve Heim
26	Data-Driven Inverse Reinforcement Learning Reproduces Tactile-Responsive Gait Flexibility in Stick Insects	Yuchen Wang, Mitsuhiro Hayashibe, Dai Owaki

Robot Zoo

Title	Short description	Presenter Names
Human-like EcoWalker-3	Bipedal robot mimicking leg mechanics with passive unlocking mechanisms	Bernadett Kiss, A. Buchmann, D. Renjewski, A. Badri-Spröwitz
Inchworm Robot with Friction Pads	Tethered inchworm-like robot with 3D-printed anisotropic friction pads	Jiří Kubík, Anastázie Rišková
Dinosaur Hindlimb Robot	Reconstruction of dinosaur hindlimb with pneumatic muscles to achieve stance	Kazuki Ito et al.
3D-Printed Magnetic Butterflies	Magnetic butterfly wings with adaptive bending under magnetic fields	M. B. Khan et al.
Modular Robot Snail	Modular soft robot with snail-like muscle-inspired motion using vacuum actuators	S. P. M. Babu et al.
Crawling with a Soft Skin	Untethered soft snake robot using kirigami scales and tendon actuation for rectilinear crawling	Aida Parvaresh, Burcu Seyidoglu, Ali Sahafi, Ahmad Rafsanjani
BERT Quadrupeds	Elastic quadruped robots exploring locomotion via passive dynamics and RL	Davide Calzolari et al.

Friday, July 11

Time Slot	Event Type	Details	
8:30-9:30	Plenary Talk 4	Rebecca Kramer Bottiglio, Yale University	Soft robots that adapt to changing tasks and environments
9:30-10:10	Closing ceremony	Including the introduction of the next AMAM	
10:10-10:30	Coffee Break		

Oral Session 4 — Chair: Akio Ishiguro (10:30-12:00)

Time	Title	Authors
10:30- 10:43	Adaptive Learning Control for Soft Robotic Fish: Enhancing Body-Caudal Undulation under Dynamic Flow Conditions	Fabian Schwab, Federico Allione, Bingcheng Wang, Mohamed El Arayshi, Claudio Mucignat , Ivan Lunati , Cristiano M. Verrelli , Ardian Jusuf
10:43- 10:56	Inside the snake's head: a bio-robotic study of the stability of slender swimmers on the water surface	Johann Herault, Max Roccuzzo
10:56- 11:09	Robotic Study on the Control and Power Consumption of Bout and Glide Swimming	Xiangxiao Liu, François A. Longchamp, Luca Zunino, Selina I. Bothner, Lisa R. Schneider, André Guignard, Alessandro Crespi, Guillaume Bellegarda, Alexandre Bernardino, Eva A. Naumann, Auke Ijspeert
11:09- 11:22	The Sensitivity of Muscle Activity to Magnitude, Duration and Timing of Small Plantarflexion Torque Pulses During Walking.	Zahra S. Mahdian, Mhairi K. MacLean
11:22- 11:35	Adaptive crawling with a soft skin	Aida Parvaresh, Burcu Seyidoglu, Ali Sahafi, Ahmad Rafsanjani
11:35- 11:48	Emergent dynamics of a self-excited, insect-inspired, flapping robot in forward flight conditions	Ellen Liu, Ethan Wold, Rundong Yang, Simona Ivanov, Nicholas Gravish, Simon Sponberg
11:48- 12:00	Simulating the locomotion of walking fish	Michael Ishida, Narges Khadem Hosseini, Valentina Di Santo, Neil Shubin, Fumiya Iida

Time Slot	Event Type	Details	
12:00-13:00	Lunch Break		
13:00-13:30	Keynote Speaker 7	Oliver Brock, TU Berlin	Is Dexterous Manipulation in Robots Converging Towards How Humans Do It?
13:30-14:00	Keynote Speaker 8	Koh Hosoda, Kyoto University	Quadruped Robots driven by Pneumatic Artificial Muscles
14:00-14:40	Panel Discussions	Rebecca Kramer Bottiglio, Oliver Brock, Koh Hosoda, Hitoshi Aonuma, Ardian Yusufi	
14:40-15:00	Coffee Break		

Oral Session 5 — Chair: Dai Owaki (15:00-16:00)

Time	Title	Author
15:00- 15:12	Improvement of Phototactic Performance of Underwater Modular Robots through Stroke Synchronization	Keohi Nishikawa, Jumpei Yamaguchi, Hayato Dan, Daisuke Kurabayashi
15:12 - 15:24	A measurement concept to collect running data in the real world	Daniel Fener, Diana Cervera, André Seyfarth, Maximilian Stasica
15:24-15:36	Bio-inspired Open Ball Joint with Intra-Articular Force Sensors	Shinsuke Nakashima, Yilun Sun, Qi An, Atsushi Yamashita, Tim C. Lueth
15:36- 15:48	How does the shape of the self-propelled particle affect its motion?	Yuki Koyano
15:48- 16:00	A Snail Inspired Modular Soft Robot	Saravana Prashanth Murali Babu, Cao Danh Do, Alessio Mondini, Barbara Mazzolai

Time Slot	Event Type	Details
16:00-17:00	Farewell and Award	Closing remarks, Best paper award, snack and drink