

2019 2nd IEEE International Conference on Soft Robotics (RoboSoft 2019)

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Content List of 2019 2nd IEEE International Conference on Soft Robotics (RoboSoft)

Technical Program for Sunday April 14, 2019

SuWAT1	317A
WS1 (AM 1): Toward the Nature of Information Processing in Soft Machines: Bridging Flexible Electronics and Morphological Computation (Workshop)	
09:00-10:30	SuWAT1.1
<i>Toward the Nature of Information Processing in Soft Machines: Bridging Flexible Electronics and Morphological Computation*. N/A</i>	
Nakajima, Kohei	University of Tokyo
Iida, Fumiya	University of Cambridge
Suzumori, Koichi	Tokyo Institute of Technology

SuWAT2	317B
WS2 (AM 1): Soft Robots Design, Development, and Manufacturing - Insights from Industrial Applications (Workshop)	
09:00-10:30	SuWAT2.1
<i>Soft Robots Design, Development, and Manufacture & Insights from Industrial Applications*. N/A</i>	
Mahon, Stephen	The University of Edinburgh
Shih, Benjamin	University of California, San Diego
Yuen, Michelle Ching-Sum	Purdue University
Tolley, Michael T.	University of California, San Diego
Stokes, Adam Andrew	University of Edinburgh

SuWAT3	317C
WS3 (AM 1): Morphological Computation through Physical Adaptation of Soft Robots (Workshop)	
09:00-10:30	SuWAT3.1
<i>Morphological Computation through Physical Adaptation of Soft Robots*. N/A</i>	
Hughes, Josie	University of Cambridge
Iida, Fumiya	University of Cambridge
Maiolino, Perla	University of Oxford
Nanayakkara, Thrishantha	Imperial College London
Cianchetti, Matteo	Scuola Superiore Sant'Anna

SuWAT4	318A
WS4 (AM 1): DEFROST Platform: Modeling, Simulation and Control of Deformable Robots on SOFA Framework (Workshop)	
09:00-10:30	SuWAT4.1
<i>DEFROST Platform: Modeling, Simulation and Control of Deformable Robots on SOFA Framework*. N/A</i>	
Duriez, Christian	INRIA

SuWAT5	318B
WS5 (AM 1): Aquatic Soft Robots (Workshop)	
09:00-10:30	SuWAT5.1
<i>Aquatic Soft Robots*. N/A</i>	
Aracri, Simona	University of Edinburgh
Nemitz, Markus	The University of Edinburgh
Valdivia y Alvarado, Pablo	Singapore University of Technology and Design, MIT
Suaria, Giuseppe	CNR-ISMAR

SuWCT6	318C
WS6 (PM 1): Eversion and Growing Soft Robots (Workshop)	
14:00-16:00	SuWCT6.1
<i>Half-Day Workshop on Eversion and Growing Soft Robots*. N/A</i>	
Konstantinova, Jelizaveta	Queen Mary University of London
Mazzolai, Barbara	Istituto Italiano Di Tecnologia
Wurdemann, Helge Arne	University College London
Althoefer, Kaspar	Queen Mary University of London

Technical Program for Monday April 15, 2019

MoP1L	E1+2+3+4
Plenary 1: Karoline Von Häfen (Plenary)	
Chair: Cho, Kyu-Jin	Seoul National University, Biorobotics Laboratory
09:00-10:00	MoP1L.1
<i>Lightweight Robotics with Artificial Intelligence*.N/A</i>	
von Häfen, Karoline	Festo
MoPS	E1+2+3+4
Poster Teaser 1 (Interactive)	
Chair: Sameoto, Dan	University of Alberta
Co-Chair: Sakes, Aimee	TU Delft
10:10-10:11	MoPS.1
<i>Experimental Evaluation of Textile Mechanisms Made of Artificial Muscles</i> , pp. 1-6.	
Hiramitsu, Tatsuhiko	Tokyo Institute of Technology
Suzumori, Koichi	Tokyo Institute of Technology
Nabae, Hiroyuki	Tokyo Institute of Technology
Endo, Gen	Tokyo Institute of Technology
10:11-10:12	MoPS.2
<i>Computational Design for Inflated Shape of a Modular Soft Robotic Actuator</i> , pp. 7-12.	
Ellis, David Rostin	Stellenbosch University
Venter, Martin Philip	Stellenbosch University
Venter, Gerhard	Stellenbosch University
10:12-10:13	MoPS.3
<i>Dimension Optimization of Pneumatically Actuated Soft Continuum Manipulators</i> , pp. 13-18.	
Peng, Xiangyu	Shanghai Jiao Tong University
Zhang, Ningbin	Shanghai Jiao Tong University
Ge, Lisen	Shanghai Jiao Tong University
Gu, Guoying	Shanghai Jiao Tong University
10:13-10:14	MoPS.4
<i>EPAM: Eversive Pneumatic Artificial Muscle</i> , pp. 19-24.	
Abrar, Taqi	Queen Mary University of London
Putzu, Fabrizio	Queen Mary University of London
Konstantinova, Jelizaveta	Queen Mary University of London
Althoefer, Kaspar	Queen Mary University of London
10:14-10:15	MoPS.5
<i>A Soft Actuator with Tunable Mechanical Configurations for Object Grasping Based on Sensory Feedback</i> , pp. 25-30.	
Fang, Xi	Beihang University
Liu, Zemin	Beihang University
Hao, Yufei	Beihang University
Yang, Hui	Northeastern University
Liu, Jiaqi	Beihang University
Xie, Zhexin	Beihang University
Wen, Li	Beihang University
10:15-10:16	MoPS.6
<i>A Wireless Compact Control Unit (WiCCU) for Untethered Pneumatic Soft Robots</i> , pp. 31-36.	
Manfredi, Luigi	University of Dundee
Cuschieri, Alfred	University of Dundee

10:16-10:17	MoPS.7
<i>Low-Pressure Soft Inflatable Joint Driven by Inner Tendon</i> , pp. 37-42.	
Seong, Young Ah	The University of Tokyo
Niyama, Ryuma	University of Tokyo
Kawahara, Yoshihiro	The University of Tokyo
Kuniyoshi, Yasuo	The University of Tokyo
10:17-10:18	MoPS.8
<i>STAS: An Antagonistic Soft Pneumatic Actuator Assembly for High Torque Output</i> , pp. 43-48.	
Miller-Jackson, Tiana	National University of Singapore
Li, Jevons	Georgia Institute of Technology
Natividad, Rainier	National University of Singapore
Yeow, Chen-Hua	National University of Singapore
10:18-10:19	MoPS.9
<i>Cutting the Cord: Soft Haptic Devices without a Pressure Source</i> , pp. 49-55.	
Usevitch, Nathan	Stanford
Stanley, Andrew A.	Stanford University
10:19-10:20	MoPS.10
<i>Evaluation of Design Aspects of Modular Pneumatic Soft Robotic Endoscopes</i> , pp. 56-61.	
Lenssen, Jan	University of Twente
Naghibi, Hamid	University of Twente
Abayazid, Momen	University of Twente
10:20-10:21	MoPS.11
<i>Tiled Auxetic Cylinders for Soft Robots</i> , pp. 62-67.	
Simons, Melanie Florine	University of Bristol
Digumarti, Krishna Manaswi	Bristol Robotics Laboratory
Conn, Andrew	University of Bristol
Rossiter, Jonathan	University of Bristol
10:21-10:22	MoPS.12
<i>Buckling Elements for Elastomer Deformation</i> , pp. 68-73.	
Partridge, Alix James	University of Bristol
Conn, Andrew	University of Bristol
10:22-10:23	MoPS.13
<i>Driving Soft Robots with Low-Boiling Point Fluids</i> , pp. 74-79.	
Garrad, Martin	University of Bristol
Soter, Gabor	University of Bristol
Hauser, Helmut	University of Bristol
Conn, Andrew	University of Bristol
Rossiter, Jonathan	University of Bristol
10:23-10:24	MoPS.14
<i>A Passively Adaptive Microspine Grapple for Robust, Controllable Perching</i> , pp. 80-87.	
Nguyen, Hai-Nguyen	Imperial College London
Siddall, Robert	Imperial College London
Stephens, Brett	ETH Zurich
Navarro-Rubio, Alberto	Imperial College London
Kovac, Mirko	Imperial College London
10:24-10:25	MoPS.15
<i>Low-Cost Wireless Modular Soft Tensegrity Robots</i> , pp. 88-93.	
Rieffel, John	Union College
Kimber, Jonathan	Union College
Ji, Zongliang	Union College
Sipple, Thomas	Union College
Petridou, Aikaterini	Union College
Barhydt, Kentaro	Union College
Ricci, Elizabeth Anne	Cornell University

Boggs, James Mumma	Union College
Dosiek, Luke	Union College
10:25-10:26	MoPS.16
<i>Configurable Tendon Routing in a 3D-Printed Soft Actuator for Improved Locomotion in a Multi-Legged Robot</i> , pp. 94-101.	
Barreiros, Jose	Cornell University
O'Brien, Kevin	Cornell University
Hong, Samantha	Cornell University
Xiao, Michael	Cornell University
Yang, Ho-Jung	Cornell University
Shepherd, Robert	Cornell University
10:26-10:27	MoPS.17
<i>Automated Recycling Separation Enabled by Soft Robotic Material Classification</i> , pp. 102-107.	
Chin, Lillian	Massachusetts Institute of Technology
Lipton, Jeffrey	MIT
Yuen, Michelle Ching-Sum	Purdue University
Kramer-Bottiglio, Rebecca	Yale University
Rus, Daniela	MIT
10:27-10:28	MoPS.18
<i>Delicate yet Strong: Characterizing the Electro-Adhesion Lifting Force with a Soft Gripper</i> , pp. 108-113.	
Cacucciolo, Vito	École Polytechnique Fédérale De Lausanne
Shintake, Jun	University of Electro-Communications
Shea, Herbert	EPFL
10:28-10:29	MoPS.19
<i>A Wrapping Gripper for Packaging Chopped and Granular Food Materials</i> , pp. 114-119.	
Kuriyama, Yoshiyuki	Ritsumeikan University
Okino, Yuusuke	Ritsumeikan University
Wang, Zhongkui	Ritsumeikan University
Hirai, Shinichi	Ritsumeikan Univ
10:29-10:30	MoPS.20
<i>Integration of Thermoresponsive Velcro-Like Adhesive for Soft Robotic Grasping of Fabrics or Smooth Surfaces</i> , pp. 120-125.	
Zhang, Teng	Northwestern Polytechnical University
Liang, Tianshuo	Department of Mechanical Engineering, University of Alberta
Yue, Xiaokui	Northwestern Polytechnical University(P.R.China)
Sameoto, Dan	University of Alberta
10:30-10:31	MoPS.21
<i>Magnetically Guided Soft Robotic Grippers</i> , pp. 126-130.	
Skrivan, Vojtech	University of West Bohemia
Sodomka, Ondrej	University of West Bohemia
Mach, Frantisek	University of West Bohemia
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<i>Development of Contact Area Variable Surface for Manipulation Requiring Sliding</i> , pp. 131-136.	
Nojiri, Seita	Kanazawa University
Mizushima, Kaori	Kanazawa University
Suzuki, Yosuke	Kanazawa University
Tsuji, Tokuo	Kanazawa University
Watanabe, Tetsuyou	Kanazawa University
10:32-10:33	MoPS.23
<i>Development of a Three-Fingered Jamming Gripper for</i>	

<i>Corresponding to the Position Error and Shape Difference</i> , pp. 137-142.	
Amano, Kohei	Waseda University
Iwasaki, Yukiko	Waseda University
Nakabayashi, Koki	Waseda University
Iwata, Hiroyasu	Waseda University
10:33-10:34	MoPS.24
<i>Characterising 3D-Printed Soft Fin Ray Robotic Fingers with Layer Jamming Capability for Delicate Grasping</i> , pp. 143-148.	
Elgeneidy, Khaled	University of Lincoln
Lightbody, Peter	University of Lincoln
Pearson, Simon	University of Lincoln
Neumann, Gerhard	University of Lincoln
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<i>Development of a Sensorized Hybrid Gripper to Evaluate Grasping Quality</i> , pp. 149-154.	
Park, Wookeun	UNIST
Seo, Seongmin	UNIST
Bae, Joonbum	UNIST
10:35-10:36	MoPS.26
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Gilday, Kieran	University of Cambridge
Hughes, Josie	University of Cambridge
Iida, Fumiya	University of Cambridge
10:36-10:37	MoPS.27
<i>A Low-Cost Inchworm-Inspired Soft Robot Driven by Supercoiled Polymer Artificial Muscle</i> , pp. 161-166.	
Yang, Yang	The Hong Kong University of Science and Technology
Tse, Yu Alexander	The Hong Kong University of Science and Technology
Zhang, Yazhan	The Hong Kong University of Science and Technology
Kan, Zicheng	The Hong Kong University of Science and Technology
Wang, Michael Yu	Hong Kong University of Science & Technology
10:37-10:38	MoPS.28
<i>Actuation Frequency-Dependent Automatic Behavioral Switching on Caterpillar-Inspired Crawling Robot</i> , pp. 167-171.	
Umedachi, Takuya	The University of Tokyo
Shimizu, Masahiro	Osaka University
Kawahara, Yoshihiro	The University of Tokyo
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<i>Nutation Aids Heterogeneous Substrate Exploration in a Robophysical Root</i> , pp. 172-177.	
Ozkan-Aydin, Yasemin	Georgia Institute of Technology
Murray-Cooper, Mason	Georgia Institute of Technology
Aydin, Enes	Georgia Institute of Technology
McCaskey, Erin	Georgia Institute of Technology
Naclerio, Nicholas	University of California, Santa Barbara
Hawkes, Elliot Wright	University of California, Santa Barbara
Goldman, Daniel	Georgia Institute of Technology
10:39-10:40	MoPS.30
<i>Adaptive Compliant Foot Design for Salamander Robots</i> , pp. 178-185.	
Paez, Laura	École Polytechnique Fédérale De Lausanne (EPFL)
Melo, Kamilo	EPFL

Thandiackal, Robin	EPFL
Ijspeert, Auke	EPFL
10:40-10:41	MoPS.31
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Wang, Tao	University of Southampton
Lidtke, Artur	University of Southampton
Giorgio-Serchi, Francesco	University of Edinburgh
Weymouth, Gabriel	University of Southampton
10:41-10:42	MoPS.32
<i>Passive Whole-Body Control for Quadruped Robots: Experimental Validation Over Challenging Terrain</i> , N/A	
Fahmi, Shamel	Istituto Italiano Di Tecnologia
Mastalli, Carlos	CNRS
Focchi, Michele	Fondazione Istituto Italiano Di Tecnologia
Semini, Claudio	Istituto Italiano Di Tecnologia
10:42-10:43	MoPS.33
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Duggan, Timothy R.	Cornell University
Horowitz, Logan	Cornell University
Ulug, Asena	Cornell University
Baker, Emilie Renee	Cornell University
Petersen, Kirstin Hagelskjaer	Cornell University
10:43-10:44	MoPS.34
<i>Gait Generation with Smooth Transition Using Neural Oscillator Network Based Locomotion Control for Snake-Like Robot</i> , pp. 206-211.	
Zhang, Dong	School of Information Science and Technology, Beijing University
Xiao, Qing	Beijing University of Chemical Technology
Cao, Zhengcai	Beijing University of Chemical Technology
MoAT1	E1+2+3+4
Actuators 1 (Regular)	
Chair: Tahara, Kenji	Kyushu University
Co-Chair: Bishop-Moser, Josh	University of Michigan
11:20-11:40	MoAT1.1
<i>Keynote: The Integral Design of Robots Via Soft Material Composites*.N/A</i>	
Shepherd, Robert	Cornell University
11:40-11:55	MoAT1.2
<i>Electrical Behavior of a Self-Sensing Actuator Made of Electroactive Polymers</i> , pp. 212-216.	
Peng, Chia-Ju	National Central University
B. Ribeiro, Frederic	Laboratory of Physical-Chemistry of Polymers and Interfaces (LPP)
Plesse, Cedric	LPPI - University of Cergy-Pontoise
Chen, Shih-Jui	National Central University
Chassagne, Luc	University of Versailles
Cagneau, Barthélemy	Université De Versailles Saint-Quentin En Yvelines
11:55-12:10	MoAT1.3
<i>Bi-Modal Control of Vacuum-Powered Soft Pneumatic Actuators with Embedded Liquid Metal-Based Strain Sensitive Skin</i> , pp. 217-	

221.	Robertson, Matthew	EPFL
	Dejace, Laurent	EPFL
	Lacour, Stéphanie P.	EPFL
	Paik, Jamie	Ecole Polytechnique Federale De Lausanne
12:10-12:25		MoAT1.4
<i>High Force Generation Using Inflatable Toroidal Soft Robot Actuators</i> , pp. 222-226.		
	Bishop-Moser, Josh	University of Michigan
12:25-12:40		MoAT1.5
<i>Rotational Angle Trajectory Tracking of a Twisted Polymeric Fiber Actuator by the Combination of a Model-Based Feed-Forward and Estimated Temperature Feedback</i> , pp. N/A		
	Hayashi, Ryo	Kyushu University
	Masuya, Ken	Tokyo Institute of Technology
	Takagi, Kentaro	Nagoya University
	Irisawa, Toshihira	Nagoya University
	Fujino, Rui	Denso
	Yamauchi, Takuma	DENSO
	Tanaka, Eitaro	DENSO
	Tahara, Kenji	Kyushu University

MoAT2		E6
Novel Mechanisms for Soft Robots (Regular)		
Chair: Beccai, Lucia	Center for Micro-BioRobotics	
Co-Chair: Wang, Hongbo	Istituto Italiano Di Tecnologia	
11:20-11:40		MoAT2.1
<i>Keynote: Soft Robotics Mechanisms: The Fascinating Role of Fibers*. N/A</i>		
	Cianchetti, Matteo	Scuola Superiore Sant'Anna
11:40-11:55		MoAT2.2
<i>Load-Sharing in Soft and Spiny Paws for a Large Climbing Robot</i> , pp. N/A		
	Ruotolo, Wilson	Stanford University
	Roig, Frances Silva	Stanford University
	Cutkosky, Mark	Stanford University
11:55-12:10		MoAT2.3
<i>A Wireless Inductive Sensing Technology for Soft Pneumatic Actuators Using Magnetorheological Elastomers</i> , pp. 242-248.		
	Wang, Hongbo	Istituto Italiano Di Tecnologia
	Totaro, Massimo	Istituto Italiano Di Tecnologia
	Astreinidi Blandin, Afroditi	Italian Institute of Technology and Scuola Superiore Sant'Anna
	Beccai, Lucia	Center for Micro-BioRobotics
12:10-12:25		MoAT2.4
<i>Generalized Delta Mechanisms from Soft Actuators</i> , pp. 249-256.		
	Blumenschein, Laura	Stanford University
	Menguc, Yigit	Oregon State University
12:25-12:40		MoAT2.5
<i>Design of a Lightweight Inflatable Sensing Sleeve for Increased Adaptability and Safety of Legged Robots</i> , pp. 257-264.		
	Kim, Taekyoung	Seoul National University
	Park, Jaejun	University of Illinois at Urbana-Champaign
	Yoon, Sohee John	Seoul National University
	Kong, Do Hun	University of Illinois at Urbana-Champaign
	Park, Hae-Won	University of Illinois at Urbana-Champaign

Park, Yong-Lae

Seoul National University

Tolley, Michael T.

University of California, San Diego

MoP2L	E1+2+3+4
Plenary 2: Daniela Rus (Plenary)	
Chair: Paik, Jamie	Ecole Polytechnique Federale De Lausanne
14:10-15:10	MoP2L.1
<i>Toward Soft and Capable Robots*</i> . N/A	
Rus, Daniela	MIT
MoBT1	E1+2+3+4
Actuators 2 (Regular)	
Chair: Wang, Charlie C.L.	The Chinese University of Hong Kong
Co-Chair: Krishnan, Girish	University of Illinois Urbana Champaign
16:30-16:50	MoBT1.1
<i>Keynote: Inspiration from Self-Healing, Multi Material and Variable Recruitment of Biological Systems for Enhanced Soft Robots*</i> . N/A	
Vanderborght, Bram	Vrije Universiteit Brussel
16:50-17:05	MoBT1.2
<i>Reducing Out-Of-Plane Deformation of Soft Robotic Actuators for Stable Grasping</i> , pp. 265-270.	
Scharff, Rob B.N.	Delft University of Technology
Wu, Jun	TU Delft
Geraedts, Jo	Delft University of Technology
Wang, Charlie C.L.	The Chinese University of Hong Kong
17:05-17:20	MoBT1.3
<i>Architectures of Soft Pneumatic Actuators Inspired by Muscle Fiber Arrangements</i> , pp. 271-276.	
Satheeshbabu, Sreeshankar	University of Illinois Urbana Champaign
Thompson, Nicholas	University of Illinois at Urbana-Champaign
Xiao, Chenzhang	University of Illinois Urbana Champaign
Krishnan, Girish	University of Illinois Urbana Champaign
17:20-17:35	MoBT1.4
<i>Towards More Energy Efficient Pneumatic Soft Actuators Using a Port-Hamiltonian Approach</i> , pp. 277-282.	
Chun, Ho-Tak Derek	Heriot-Watt University
Roberts, Jamie	University of Edinburgh
Sayed, Mohammed	The University of Edinburgh
Aracri, Simona	University of Edinburgh
Stokes, Adam Andrew	University of Edinburgh
17:35-17:50	MoBT1.5
<i>Antagonistic Pneumatic Actuators with Variable Stiffness for Soft Robotic Applications</i> , pp. 283-288.	
Murali Babu, Saravana Prashanth	Italian Institute of Technology
Sadeghi, Ali	Istituto Italiano Di Tecnologia
Mondini, Alessio	Istituto Italiano Di Tecnologia
Mazzolai, Barbara	Istituto Italiano Di Tecnologia
17:50-18:05	MoBT1.6
<i>Soft Robot Actuation Strategies for Locomotion in Granular Substrates</i> , N/A.	
Ortiz, Daniel	University of California San Diego
Gravish, Nick	UC San Diego

MoBT2	E6
Grasping & Manipulation (Regular)	
Chair: Ren, Hongliang	Faculty of Engineering, National University of Singapore
Co-Chair: Truby, Ryan Landon	Massachusetts Institute of Technology
16:30-16:50	MoBT2.1
<i>Keynote: The Consequences of Softness for Robot Manipulation*</i> N/A	
Brock, Oliver	Technische Universität Berlin
16:50-17:05	MoBT2.2
<i>Magnetic Augmented Self-Sensing Flexible Electroadhesive Grippers</i> , N/A	
Guo, Jianglong	University of Bristol
Xiang, Chaoqun	Bristol Robotics Laboratory
Zanini, Plinio	University of Bristol
Rossiter, Jonathan	University of Bristol
17:05-17:20	MoBT2.3
<i>Transcend Anthropomorphic Robotic Hand with Modular Antagonistic Fingers and Adhesive Soft Modulations</i> , N/A.	
Li, Changsheng	National University of Singapore
Gu, Xiaoyi	National University of Singapore
Xiao, Xiao	National University of Singapore
Zhu, Guoniu	National University of Singapore
A.V., Prituja	Nanyang Technological University
Ren, Hongliang	Faculty of Engineering, National University of Singapore
17:20-17:35	MoBT2.4
<i>A Novel Binding Hand with Closed Loop Thread Capable of Grasping Small-Diameter Objects</i> , pp. 310-315.	
Mimori, Yuki	Ritsumeikan University
Wang, Zhongkui	Ritsumeikan University
Hirai, Shinichi	Ritsumeikan Univ
17:35-17:50	MoBT2.5
<i>A Multi-Material Self-Healing Soft Gripper</i> , pp. 316-321.	
Roels, Ellen	Vrije Universiteit Brussel
Terryn, Seppe	Vrije Universiteit Brussel (VUB)
Brancart, Joost	Vrije Universiteit Brussel (VUB)
Van Assche, Guy	Vrije Universiteit Brussel (VUB)
Vanderborght, Bram	Vrije Universiteit Brussel
17:50-18:05	MoBT2.6
<i>Soft Robotic Fingers with Embedded Ionogel Sensors and Discrete Actuation Modes for Somatosensitive Manipulation</i> , pp. 322-329.	
Truby, Ryan Landon	Massachusetts Institute of Technology
Katzschmann, Robert Kevin	Massachusetts Institute of Technology
Lewis, Jennifer	Harvard University, Wyss Institute for Biologically Inspired Eng
Rus, Daniela	MIT

Technical Program for Tuesday April 16, 2019

TuP1L	E1+2+3+4
Plenary 3: Metin Sitti (Plenary)	
Chair: Park, Yong-Lae	Seoul National University
09:00-10:00	TuP1L.1
<i>Bio-Inspired Small-Scale Soft Robotics*</i> . N/A	
Sitti, Metin	Max-Planck Institute for Intelligent Systems
TuPS	E1+2+3+4
Poster Teaser 2 (Interactive)	
Chair: Kramer-Bottiglio, Rebecca	Yale University
Co-Chair: Ozcan, Onur	Bilkent University
10:10-10:11	TuPS.1
<i>Measurement of Shear Forces During Gripping Tasks with a Low-Cost Tactile Sensing System</i> , pp. 330-336.	
Agarwal, Rishabh	University of Maryland College Park
Bergbreiter, Sarah	Carnegie Mellon University
10:11-10:12	TuPS.2
<i>Detecting Sliding Movement Location on Morphologically Changeable Soft Tactile Sensing System with Three-Axis Accelerometer</i> , pp. 337-342.	
Shibuya, Koji	Ryukoku University
Iwamoto, Yuki	Ryukoku University
Trinh, Hiep	Ryukoku University
Ho, Van	Japan Advanced Institute of Science and Technology
10:12-10:13	TuPS.3
<i>Development of a Vision-Based Soft Tactile Muscularis</i> , pp. 343-348.	
Duong, Lac	Japan Advanced Institute of Science and Technology
Asahina, Rei	Japan Advanced Institute of Science and Technology
Wang, Jia	Japan Advanced Institute of Science and Technology
Ho, Van	Japan Advanced Institute of Science and Technology
10:13-10:14	TuPS.4
<i>Intelligent Position, Pressure and Depth Sensing in a Soft Optical Waveguide Skin</i> , pp. 349-354.	
Amoateng, David	Italian Institute of Technology and Scuola Superiore Sant'Anna
Totaro, Massimo	Istituto Italiano Di Tecnologia
Crepaldi, Marco	Istituto Italiano Di Tecnologia
Falotico, Egidio	Scuola Superiore Sant'Anna
Beccai, Lucia	Center for Micro-BioRobotics
10:14-10:15	TuPS.5
<i>Skinflow: A Soft Robotic Skin Based on Fluidic Transmission</i> , pp. 355-360.	
Soter, Gabor	University of Bristol
Garrad, Martin	University of Bristol
Conn, Andrew	University of Bristol
Hauser, Helmut	University of Bristol
Rossiter, Jonathan	University of Bristol
10:15-10:16	TuPS.6
<i>An Elastomer-Based Flexible Optical Force and Tactile Sensor</i> , pp. 361-366.	

Li, Wanlin	Queen Mary University of London
Konstantinova, Jelizaveta	Queen Mary University of London
Noh, Yohan	King's College London
Ma, Zixiang	Queen Mary University of London
Alomainy, Akram	Queen Mary University of London
Althoefer, Kaspar	Queen Mary University of London
10:16-10:17	TuPS.7
<i>Soft Sensors for Curvature Estimation under Water in a Soft Robotic Fish</i> , pp. 367-371.	
Wright, Brian	Max Planck Institute for Intelligent Systems
Vogt, Daniel	Harvard University
Wood, Robert	Harvard University
Jusufi, Ardian	Max Planck Institute for Intelligent Systems
10:17-10:18	TuPS.8
<i>A Piezoresistive Flexible Sensor to Detect Soft Actuator Deformation</i> , pp. 372-377.	
Maselli, Martina	Scuola Superiore Sant'Anna
Zrinscak, Debora	Scuola Superiore Sant'Anna
Magliola, Vanni	University of Pisa
Cianchetti, Matteo	Scuola Superiore Sant'Anna
10:18-10:19	TuPS.9
<i>Reconfigurable Soft Capacitive Sensor with Variable Stiffness Ring</i> , pp. 378-383.	
Dorsey, Kristen	Smith College
10:19-10:20	TuPS.10
<i>Multi-Material Soft Strain Sensors with High Gauge Factors for Proprioceptive Sensing of Soft Bending Actuators</i> , pp. 384-390.	
Park, Myungsun	Seoul National University
Ohm, Yunsik	Carnegie Mellon University
Kim, DongWook	Seoul National University
Park, Yong-Lae	Seoul National University
10:20-10:21	TuPS.11
<i>Sensory Garments with Vibrotactile Feedback for Monitoring and Informing Seated Posture</i> , pp. 391-397.	
Barone, Vincent	University of Michigan
Yuen, Michelle Ching-Sum	Purdue University
Kramer-Bottiglio, Rebecca	Yale University
Sienko, Kathleen	University of Michigan
10:21-10:22	TuPS.12
<i>Design and Prototype of Supernumerary Robotic Finger (SRF) Inspired by Fin Ray Effect for Patients Suffering from Sensorimotor Hand Impairment</i> , pp. 398-403.	
Hussain, Irfan	Khalifa Robotics Institute, University of Siena, SIRS Lab
Anwar, Muddasar	Aerospace Research and Innovation Center, Khalifa University
Iqbal, Muhammad Zubair	University of Siena
Muthusamy, Rajkumar	Aalto University
Malvezzi, Monica	University of Siena
Seneviratne, Lakmal	L. D. Seneviratne Is with Kings College London, UK, and Robotics
Gan, Dongming	Khalifa University of Science AndTechnology
Renda, Federico	Khalifa University of Science and

	Technology University of Siena
Prattichizzo, Domenico	
10:22-10:23	TuPS.13
<i>Fabric-Based Soft Grippers Capable of Selective Distributed Bending for Assistance of Daily Living Tasks</i> , pp. 404-409.	
Pham, Huy Nguyen	Arizona State University
Sridar, Saivimal	Arizona State University
Amatya, Sunny	ARIZONA State University
Thalman, Carly	Arizona State University
Polygerinos, Panagiotis	Arizona State University
10:23-10:24	TuPS.14
<i>Towards Adaptive Prosthetic Sockets Using 3D-Printed Variable-Stiffness Shape-Memory Structures</i> , pp. 410-415.	
Pourfarzaneh, Afonso	University of Lisbon
Taghavi, Majid	University of Bristol
Helps, Tim	University of Bristol
Rositer, Jonathan	University of Bristol
10:24-10:25	TuPS.15
<i>Near-Optimal Smooth Path Planning for Multisection Continuum Arms</i> , pp. 416-421.	
Deng, Jiahao	DePaul University
Meng, Brandon	DePaul University
Kanj, Iyad	DePaul University
Godage, Isuru S.	Depaul University
10:25-10:26	TuPS.16
<i>Simplified Sensing and Control of a Plant-Inspired Cable Driven Manipulator</i> , pp. 422-427.	
Visentin, Francesco	Istituto Italiano Di Tecnologia
Mishra, Anand Kumar	Cornell University
Naselli, Giovanna A.	Italian Institute of Technology
Mazzolai, Barbara	Istituto Italiano Di Tecnologia
10:26-10:27	TuPS.17
<i>A Semi-Active Control Method for Pneumatic Actuators with Evolutionary Algorithm</i> , pp. 428-433.	
Kaneishi, Daisuke	University of California, Berkeley
Matthew, Robert, Peter	UC Berkeley
Estrada, Michael	University of California, Berkeley
Tomizuka, Masayoshi	University of California
10:27-10:28	TuPS.18
<i>Linear and Nonlinear Low Level Control of a Soft Pneumatic Actuator</i> , pp. 434-440.	
Ibrahim, Serhat	Leibniz Universität Hannover
Krause, Jan Christoph	Leibniz Universität Hannover
Raatz, Annika	Leibniz Universität Hannover
10:28-10:29	TuPS.19
<i>Information Processing Capability of Soft Continuum Arms</i> , pp. 441-447.	
Torres Amesty, Estefany	DePaul University
Nakajima, Kohei	University of Tokyo
Godage, Isuru S.	Depaul University
10:29-10:30	TuPS.20
<i>Control of a Hyper-Redundant Robot for Quality Inspection in Additive Manufacturing for Construction</i> , pp. 448-453.	
Lakhali, Othman	University Lille, CRISTAL, CNRS-UMR 9189
Achille, Melingui	Department of Physics, Faculty of Science, University of Yaoundé I
Dherbomez, Gerald	University of Lille
Merzouki, Rochdi	CRISTAL, CNRS UMR 9189, University of Lille1

10:30-10:31	TuPS.21
<i>Dynamic Motion Control of Multi-Segment Soft Robots Using Piecewise Constant Curvature Matched with an Augmented Rigid Body Model</i> , pp. 454-461.	
Katzschmann, Robert Kevin	Massachusetts Institute of Technology
Della Santina, Cosimo	Centro E. Piaggio
Toshimitsu, Yasunori	MIT
Bicchi, Antonio	Università Di Pisa
Rus, Daniela	MIT
10:31-10:32	TuPS.22
<i>Characterization of a Class of Soft Bending Arms</i> , pp. 462-469.	
Olson, Gina	Oregon State University
Woronowicz, Brian	University of Maryland, Baltimore County
Menguc, Yigit	Oregon State University
10:32-10:33	TuPS.23
<i>An Origami-Inspired Monolithic Soft Gripper Based on Geometric Design Method</i> , pp. 470-476.	
Kan, Zicheng	The Hong Kong University of Science and Technology
Zhang, Yazhan	The Hong Kong University of Science and Technology
Yang, Yang	The Hong Kong University of Science and Technology
Tse, Yu Alexander	The Hong Kong University of Science and Technology
Wang, Michael Yu	Hong Kong University of Science & Technology
10:33-10:34	TuPS.24
<i>Joint Design and Fabrication for Multi-Material Soft/Hybrid Robots</i> , pp. 477-482.	
Aygun, Cem	Bilkent University
Kwiczak-Yigitbasi, Joanna	Bilkent University
Baytekin, Bilge	Bilkent University
Ozcan, Onur	Bilkent University
10:34-10:35	TuPS.25
<i>PCI Method: A Novel Fabrication Method of Soft Mechanisms Utilizing Cure Inhibition of Addition Reaction Silicone</i> , pp. 483-490.	
Suzuki, Yosuke	Kanazawa University
Kitamura, Taichi	Kanazawa University
10:35-10:36	TuPS.26
<i>A Method to Fabricate Complex Structure for Variable Stiffness Manipulators Based on Low-Melting-Point Alloy</i> , pp. 491-495.	
Wang, Fengxu	Harbin Institute of Technology(Weihai)
Xing, Zhiguang	Harbin Institute of Technology at Weihai
Wang, Xinbo	Harbin Institute of Technology(Weihai)
Zhao, Jianwen	Harbin Institute of Technology(Weihai)
10:36-10:37	TuPS.27
<i>Aerosol Jet Printing for the Manufacture of Soft Robotic Devices</i> , pp. 496-501.	
Wilkinson, Nathan James	University of Leeds
Lukic-Mann, Maria	University of Leeds
Shuttleworth, Matthew Peter	University of Leeds
Kay, Robert William	University of Leeds
Harris, Russell	University of Leeds
10:37-10:38	TuPS.28
<i>Development of Airbag Fabrication Machine and Process for</i>	

Physical Human Machine Interaction, pp. 502-508.

Sanchez, Eric Sebastian Disney Research
Campos Zamora, Daniel Disney Research
Kim, Joohyung Disney Research

10:38-10:39 TuPS.29

Fabrication of Soft Devices with Buried Fluid Channels by Using Sacrificial 3D Printed Molds, pp. 509-513.

Koivikko, Anastasia Tampere University of Technology
Sariola, Veikko Tampere University of Technology

10:39-10:40 TuPS.30

Design and Modularization of Multi-DoF Soft Robotic Actuators, pp. N/A

Zhang, Boyu Tsinghua University
Hu, Chengquan Tsinghua University
Yang, Penghui Tsinghua University
Liao, Zhuxiu Tsinghua University
Liao, Hongen Tsinghua University

10:40-10:41 TuPS.31

Toward Shape Optimization of Soft Robots, pp. 521-526.

Morzadec, Thomas INRIA Lille
Marchal, Damien CNRS, University of Lille
Duriez, Christian INRIA

10:41-10:42 TuPS.32

Robotic Touch: Classification of Materials for Manipulation and Walking, pp. 527-533.

Bednarek, Jakub Poznań University of Technology
Bednarek, Michał Poznan University of Technology
Kicki, Piotr Poznan University of Technology
Walas, Krzysztof, Tadeusz Poznan University of Technology

10:42-10:43 TuPS.33

Structured Motor Exploration for Adaptive Learning-Based Tracking in Soft Robotic Manipulators, pp. 534-539.

Ansari, Yasmin Scuola Superiore Sant'Anna
Laschi, Cecilia Scuola Superiore Sant'Anna
Falotico, Egidio Scuola Superiore Sant'Anna

10:43-10:44 TuPS.34

Evaluation of Novel Vibrotactile Biofeedback Coding Schemes for Gait Symmetry Training, pp. 540-545.

Afzal, Muhammad Raheel KU Leuven
Lee, Hosu Gwangju Institute of Science and Technology
Eizad, Amre Gyeongsang National University
Lee, Chang Han Gyeongsang National University Hospital
Oh, Min-Kyun Gyeongsang National University Hospital
Yoon, Jungwon Gwangju Institute of Science and Technology

TuAT1 E1+2+3+4
Sensors 1 (Regular)

Chair: Bae, Joonbum UNIST
Co-Chair: Maiolino, Perla University of Oxford

11:20-11:40 TuAT1.1

*Keynote: Transparent and Stretchable Sensors and Actuators for Wearable Electronics and Soft Robot Applications**. N/A

Ko, Seung Hwan Seoul National University

11:40-11:55 TuAT1.2

Active Sensing Methods of Ionic Polymer Metal Composite (IPMC): Comparative Study in Frequency Domain, pp. 546-551.

Mohdlsa, WanHasbullah Delft University of Technology
Hunt, Andres Delft University of Technology
HosseinNia, S. Hassan Delft University of Technology

11:55-12:10 TuAT1.3

Direct Writing-Based Wiring of Liquid Metal to a Metal Electrode for Soft Sensor Systems, pp. 552-557.

Kim, Suin Ulsan National Institute of Science and Technology
Jeong, Dahee UNIST
Oh, Jihye UNIST
Bae, Joonbum UNIST

12:10-12:25 TuAT1.4

Sensing through the Body - Non-Contact Object Localisation Using Morphological Computation, pp. 558-563.

Judd, Euan University of Bristol
Soter, Gabor University of Bristol
Rossiter, Jonathan University of Bristol
Hauser, Helmut University of Bristol

12:25-12:40 TuAT1.5

Model-Free Soft-Structure Reconstruction for Proprioception Using Tactile Arrays, pp. N/A

Scimeca, Luca University of Cambridge
Hughes, Josie University of Cambridge
Maiolino, Perla University of Oxford
Iida, Fumiya University of Cambridge

TuAT2 E6

Wearable Robots 1 (Regular)

Chair: Shin, Dongjun Chung-Ang University
Co-Chair: Suzumori, Koichi Tokyo Institute of Technology

11:20-11:40 TuAT2.1

*Keynote: Making the Right Trousers: Developing Core Technologies for Wearable Soft Robotic Assistance**. N/A

Rossiter, Jonathan University of Bristol

11:40-11:55 TuAT2.2

Soft, Multi-DoF, Variable Stiffness Mechanism Using Layer Jamming for Wearable Robots, pp. N/A

Choi, Wonho Chung-Ang University
Kim, Sung Hwan Chung-Ang University
Lee, Dongun Chung-Ang University
Shin, Dongjun Chung-Ang University

11:55-12:10 TuAT2.3

Design and Characterization of a 3D Printed Soft Robotic Wrist Sleeve with 2 DoF for Stroke Rehabilitation, pp. 577-582.

Ang, Benjamin, Wee Keong NUS
Yeow, Chen-Hua National University of Singapore

12:10-12:25 TuAT2.4

Fabrication of '18 Weave' Muscles and Their Application to Soft Power Support Suit for Upper Limbs Using Thin McKibben Muscle, pp. N/A

Abe, Tomoki Tokyo Institute of Technology
Koizumi, Shoichiro Tokyo Institute of Technology
Nabae, Hiroyuki Tokyo Institute of Technology
Endo, Gen Tokyo Institute of Technology
Suzumori, Koichi Tokyo Institute of Technology
Sato, Nao Bunka Fashion College
Adachi, Michiko Bunka Fashion College
Takamizawa, Fumi Bunka Fashion College

12:25-12:40	TuAT2.5
<i>A Robotic Forearm Orthosis Using Soft Fabric-Based Helical Actuators</i> , pp. 591-596.	
Realmuto, Jonathan	University of Southern California
Sanger, Terence David	University of Southern California

TuP2L	E1+2+3+4
Plenary 4: Taeghwan Hyeon (Plenary)	
Chair: Kyung, Ki-Uk	Korea Advanced Institute of Science & Technology (KAIST)

14:10-15:10	TuP2L.1
<i>Nanomaterial-Incorporated Ultraflexible and Stretchable Electronic Devices for Medical and Healthcare Applications*</i> . N/A	
Hyeon, Taeghwan	Seoul National University

TuBT1	E1+2+3+4
Sensors 2 (Regular)	
Chair: Mochiyama, Hiromi	University of Tsukuba
Co-Chair: Mazzolai, Barbara	Istituto Italiano Di Tecnologia

16:30-16:50	TuBT1.1
<i>Keynote: Fusing Perception with Structure in Soft Robotics*</i> . N/A	
Althoefer, Kaspar	Queen Mary University of London

16:50-17:05	TuBT1.2
<i>Soft-Bubble: A Highly Compliant Dense Geometry Tactile Sensor for Robot Manipulation</i> , pp. 597-604.	
Alspach, Alex	Toyota Research Institute
Hashimoto, Kunimatsu	Toyota Research Institute
Kuppuswamy, Naveen	Toyota Research Institute
Tedrake, Russ	Massachusetts Institute of Technology

17:05-17:20	TuBT1.3
<i>ConTact Sensors: A Tactile Sensor Readily Integrable into Soft Robots</i> , pp. 605-610.	
Preechayasomboon, Pornthep	University of Washington
Rombokas, Eric	University of Washington

17:20-17:35	TuBT1.4
<i>A Biomimetic Soft Airflow Sensor with a Printed Ionic Liquid Conductor</i> , pp. 611-616.	
Shin, Hee-Sup	Carnegie Mellon University
Kim, Taekyoung	Seoul National University
Bergbreiter, Sarah	Carnegie Mellon University
Park, Yong-Lae	Seoul National University

17:35-17:50	TuBT1.5
<i>Surface Undulation Detection System Using Wearable Artificial Skin Layer with Strain Gauge</i> , pp. 617-622.	
Masaki, Toshiaki	University of Tsukuba
Ando, Mitsuhiro	University of Tsukuba
Takei, Toshinobu	Hirosaki University
Fujimoto, Hideo	Nagoya Institute of Technology
Mochiyama, Hiromi	University of Tsukuba

TuBT2	E6
Wearable Robots 2 (Regular)	
Chair: Jo, Sungho	Korea Advanced Institute of Science and Technology (KAIST)
Co-Chair: Soufian, M	University of Salford

16:30-16:50	TuBT2.1
<i>Keynote: Bio-Inspired Soft Robotics: For Practical Application of Soft Robotics Utilizing Pneumatic Artificial Muscle*</i> . N/A	
Nakamura, Taro	Chuo University

16:50-17:05	TuBT2.2
<i>A Soft Wearable Robotic Orthosis for Ankle Rehabilitation of Post-Stroke Patients</i> , N/A	
Kwon, Junghan	Seoul National University
Park, Ji-Hong	Seoul National University Bundang Hospital
Ku, Subyeong	Seoul National University
Jeong, YeongHyeon	Seoul National University
Paik, Nam-Jong	Seoul National University Bundang Hospital
Park, Yong-Lae	Seoul National University

17:05-17:20	TuBT2.3
<i>A Novel Elbow Pneumatic Muscle Actuator for Exoskeleton Arm in Post-Stroke Rehabilitation</i> , pp. 630-635.	
Irshaidat, Mae	University of Salford
Soufian, M	University of Salford
Al-Ibadi, Alaa	The University of Salford
Nefti-Meziani, Samia	University of Salford

17:20-17:35	TuBT2.4
<i>A Lightweight, Soft Wearable Sleeve for Rehabilitation of Forearm Pronation and Supination</i> , pp. 636-641.	
Park, Se-Hun	Seoul National University
Yi, Jaehyun	Seoul National University
Kim, DongWook	Seoul National University
Youngbin, Lee	Konkuk University
Koo, Sumin	Konkuk University
Park, Yong-Lae	Seoul National University

17:35-17:50	TuBT2.5
<i>Semi-Supervised Gait Generation with Two Microfluidic Soft Sensors</i> , pp. N/A	
Kim, Dooyoung	KAIST
Kim, Min	KAIST
Kwon, Junghan	Seoul National University
Park, Yong-Lae	Seoul National University
Jo, Sungho	Korea Advanced Institute of Science and Technology (KAIST)

Technical Program for Wednesday April 17, 2019

WeAT1	E1+2
Modeling & Control 1 (Regular)	
Chair: Hirai, Shinichi	Ritsumeikan Univ
Co-Chair: Realmuto, Jonathan	Univeristy of Southern California
09:00-09:20	WeAT1.1
<i>Keynote: Physics-Based Modeling of Deformable Robots for Real-Time Simulation and Control*. N/A</i>	
Duriez, Christian	INRIA
09:20-09:35	WeAT1.2
<i>A Grasping Component Mapping Approach for Soft Robotic End-Effector Control, pp. 650-655.</i>	
Zhou, Jianshu	The Univeristy of Hong Kong
Chen, Xiaojiao	The University of Hong Kong
Chang, Ukyoung	University of Hong Kong
Liu, Yunhui	Chinese University of Hong Kong
Chen, Yonghua	The University of Hong Kong
Wang, Zheng	The University of Hong Kong
09:35-09:50	WeAT1.3
<i>Tele Operable Controlling System for Hand Gesture Controlled Soft Robot Actuator, pp. 656-662.</i>	
Gunawardane, Palpolage Don Shehan Hiroshan	The Open University of Sri Lanka
Medagedara, Nimali T	The Open University of Sri Lanka
Pallewela, Eashan Anurudhdha	The Open University of Sri Lanka
09:50-10:05	WeAT1.4
<i>On Soft Fingertips for In-Hand Manipulation: Modelling and Implications for Robot Hand Design, N/A</i>	
Lu, Qiuji	Imperial College London
Rojas, Nicolas	Imperial College London
10:05-10:20	WeAT1.5
<i>Gripping Force Modeling of a Binding Hand, pp. 671-676.</i>	
Okada, Ikumi	Ritsumeikan University
Wang, Zhongkui	Ritsumeikan University
Hirai, Shinichi	Ritsumeikan Univ
10:20-10:35	WeAT1.6
<i>Straight-Fiber-Type Artificial Muscle Deformation under Pressurization, N/A</i>	
Kojima, Akihiro	Chuo University
Okui, Manabu	Chuo University
Hisamichi, Itsuki	Chuo University
Tsuji, Tomoaki	Chuo University
Nakamura, Taro	Chuo University
WeAT2	E3+4
Bio-Inspiration (Regular)	
Chair: Bae, Joonbum	UNIST
Co-Chair: Falotico, Egidio	Scuola Superiore Sant'Anna
09:00-09:20	WeAT2.1
<i>Keynote: Physical Adaptation of Bio-Inspired Soft Robots*. N/A</i>	
Iida, Fumiya	University of Cambridge
09:20-09:35	WeAT2.2
<i>Cerebellum-Inspired Approach for Adaptive Kinematic Control of Soft Robots, pp. 684-689.</i>	
Kalidindi, Hari Teja	Scuola Superiore Sant'Anna

George Thuruthel, Thomas	The BioRobotics Institute - Scuola Superiore Sant'Anna
Laschi, Cecilia	Scuola Superiore Sant'Anna
Falotico, Egidio	Scuola Superiore Sant'Anna
09:35-09:50	WeAT2.3
<i>Soft Haptic Device to Render the Sensation of Flying Like a Drone, pp. N/A</i>	
Rognon, Carine	EPFL
Koehler, Margaret	Stanford University
Duriez, Christian	INRIA
Floreano, Dario	Ecole Polytechnique Federal, Lausanne
Okamura, Allison M.	Stanford University
09:50-10:05	WeAT2.4
<i>Development of a Four-Bar Linkage Integrated with a Polypyrrole Actuator and a Resistive Sensor Toward Biomimetic Pleopods, pp. 698-703.</i>	
Kwak, Bokeon	Ulsan National Institute of Science and Technology (UNIST)
Bae, Joonbum	UNIST
10:20-10:35	WeAT2.6
<i>Toward a Bio-Inspired Variable-Stiffness Morphing Limb for Amphibious Robot Locomotion, pp. 704-710.</i>	
Baines, Robert Lawrence	Yale University
Booth, Joran	Yale University
Fish, Frank	West Chester University
Kramer-Bottiglio, Rebecca	Yale University
WeBT1	E1+2
Modeling & Control 2 (Regular)	
Chair: Katschmann, Robert Kevin	Massachusetts Institute of Technology
Co-Chair: Matsuno, Takahiro	Ritsumeikan Univ
11:00-11:20	WeBT1.1
<i>Keynote: Design and Control of the DONUTs - towards Soft, Scalable, and Self-Reconfigurable Robots*. N/A</i>	
Petersen, Kirstin Hagelskjaer	Cornell University
11:20-11:35	WeBT1.2
<i>Validation of an Extensible Rod Model for Soft Continuum Manipulators, pp. 711-716.</i>	
Gilbert, Hunter B.	Louisiana State University
Godage, Isuru S.	Depaul University
11:35-11:50	WeBT1.3
<i>Dynamically Closed-Loop Controlled Soft Robotic Arm Using a Reduced Order Finite Element Model with State Observer, pp. 717-724.</i>	
Katschmann, Robert Kevin	Massachusetts Institute of Technology
Thieffry, Maxime	Lamih
Goury, Olivier	Inria - Lille Nord Europe
Kruszewski, Alexandre	Centrale Lille
Guerra, Thierry Marie	Polytechnic University Hauts-De-France
Duriez, Christian	INRIA
Rus, Daniela	MIT
11:50-12:05	WeBT1.4
<i>Numerical Analysis of Contact Area Influence in a Capacitive Soft Force Sensor, pp. 725-730.</i>	
Matsuno, Takahiro	Ritsumeikan Univ
Hirai, Shinichi	Ritsumeikan Univ

12:05-12:20	WeBT1.5
<i>Exact Task Execution in Highly Under-Actuated Soft Limbs: An Operational Space Based Approach, N/A</i>	
Della Santina, Cosimo	Centro E. Piaggio
Pallottino, Lucia	Università Di Pisa
Rus, Daniela	MIT
Bicchi, Antonio	Università Di Pisa
12:20-12:35	WeBT1.6
<i>Soft Robots Locomotion and Manipulation Control Using FEM Simulation and Quadratic Programming, pp. 739-745.</i>	
Coevoet, Eulalie	INRIA
Escande, Adrien	Cnrs-Aist Jrl Umi3218/r1
Duriez, Christian	INRIA
WeBT2	E3+4
Fabrication & Learning/Optimization (Regular)	
Chair: Valdivia y Alvarado, Pablo	Singapore University of Technology and Design, MIT
Co-Chair: Imamura, Yumeko	National Inst. of AIST
11:00-11:20	WeBT2.1
<i>Keynote: 1 V - Driven Soft Actuators*. N/A</i>	
Park, Moon Jeong	POSTECH
11:20-11:35	WeBT2.2
<i>Assessing the Performance of Variable Stiffness Continuum Structures of Large Diameter, N/A</i>	
Clark, Angus Benedict	Imperial College London
Rojas, Nicolas	Imperial College London
11:35-11:50	WeBT2.3
<i>Simulation-based Design of Transfer Support Robot and Experimental Verification, pp. 754-761.</i>	
Imamura, Yumeko	The National Institute of Advanced Industrial Science and Techno
Endo, Yui	National Institute of Advanced Industrial Science and Technology
Yoshida, Eiichi	National Inst. of AIST
11:50-12:05	WeBT2.4
<i>Automated Fiber Embedding for Tailoring Mechanical and Functional Properties of Soft Robot Components, pp. 762-767.</i>	
Stalin, Thileepan	Singapore University of Technology and Design
Thanigaivel, Naresh Kumar	Singapore University of Technology and Design
Joseph, Vincent	Singapore University of Technology and Design
Valdivia y Alvarado, Pablo	Singapore University of Technology and Design, MIT
12:05-12:20	WeBT2.5
<i>Precise Bonding-Free Micromoulding of Miniaturized Elastic Inflatable Actuators, pp. 768-773.</i>	
Milana, Edoardo	KU Leuven
Bellotti, Mattia	KU Leuven
Gorissen, Benjamin	KU Leuven
De Volder, Michaël	Department of Engineering, University of Cambridge, Cambridge
Reynaerts, Dominiek	Division Production Engineering, Machine Design and Automation, K
12:20-12:35	WeBT2.6
<i>Robotic Skins That Learn to Control Passive Structures, N/A</i>	

Case, Jennifer	Purdue University
Yuen, Michelle Ching-Sum	Purdue University
Jacobs, Jane	Yale University
Kramer-Bottiglio, Rebecca	Yale University

WeCT1	E1+2
Locomotion & Underwater Robots (Regular)	
Chair: Stokes, Adam Andrew	University of Edinburgh
Co-Chair: Melo, Kamilo	EPFL
14:00-14:20	WeCT1.1
<i>Keynote: Dynamic Locomotion with Compliant Muscular-Skeletal Structure*. N/A</i>	
Hosoda, Koh	Osaka University
14:20-14:35	WeCT1.2
<i>Soft Robots for Extreme Environments: Removing Electronic Control, pp. 782-787.</i>	
Mahon, Stephen	The University of Edinburgh
Buchoux, Anthony	The University of Edinburgh
Sayed, Mohammed	The University of Edinburgh
Teng, Lijun	The University of Edinburgh
Stokes, Adam Andrew	University of Edinburgh
14:35-14:50	WeCT1.3
<i>Minimalist Design of a 3-Axis Passive Compliant Foot for Sprawling Posture Robots, pp. 788-794.</i>	
Melo, Kamilo	EPFL
Horvat, Tomislav	EPFL
Ijspeert, Auke	EPFL
14:50-15:05	WeCT1.4
<i>Efficient Drag-Based Swimming Using Articulated Legs with Micro Hair Arrays Inspired by a Water Beetle, pp. 795-800.</i>	
Kwak, Bokeon	Ulsan National Institute of Science and Technology (UNIST)
Lee, Dongyoung	UNIST
Bae, Joonbum	UNIST
15:05-15:20	WeCT1.5
<i>Eversion and Retraction of a Soft Robot towards the Exploration of Coral Reefs, pp. 801-807.</i>	
Luong, Jamie	University of California, San Diego
Glick, Paul	UCSD Bioinspired Robotics and Design Lab
Ong, Aaron	University of California San Diego
deVries, Maya Susanna	University of California, San Diego
Sandin, Stuart	UC San Diego
Hawkes, Elliot Wright	University of California, Santa Barbara
Tolley, Michael T.	University of California, San Diego
15:20-15:35	WeCT1.6
<i>Loco-Sheet: Morphing Inchworm Robot across Rough-Terrain, pp. 808-813.</i>	
Chang, Mun Hyeok	Seoul National University Biorobotics Lab
Chae, Su Hwan	Seoul National University Bio Robotics Lab
Yoo, Hye Ju	Seoul National University
Kim, Sang-Hun	Seoul National University
Kim, Woongbae	Seoul National University

WeCT2		E3+4
Origami & Smart Structures (Regular)		
Chair: Zhang, Ketao	Queen Mary University of London	
Co-Chair: Aracri, Simona	University of Edinburgh	
14:00-14:20	WeCT2.1	
<i>Keynote: Rapid Fabrication of Smart Laminate Composites for Origami Robots*. N/A</i>		
Tolley, Michael T.	University of California, San Diego	
14:20-14:35	WeCT2.2	
<i>Programmable Fluidic Networks Design for Robotic Origami Sequential Self-Folding, pp. 814-820.</i>		
Zhakypov, Zhenishbek	École Polytechnique Fédérale De Lausanne (EPFL)	
Mete, Mustafa	École Polytechnique Fédérale De Lausanne (EPFL)	
Fiorentino, Julien	École Polytechnique Fédérale De Lausanne (EPFL)	
Paik, Jamie	Ecole Polytechnique Federale De Lausanne	
14:35-14:50	WeCT2.3	
<i>A Design and Fabrication Approach for Pneumatic Soft Robotic Arms Using 3D Printed Origami Skeletons, pp. 821-827.</i>		
Zhang, Ketao	Queen Mary University of London	
Zhu, Yifan	Imperial College London	
Lou, Chuqian	Imperial College London	
Zheng, Peter	Imperial College London	
Kovac, Mirko	Imperial College London	
14:50-15:05	WeCT2.4	
<i>Kirigami Skin Improves Soft Earthworm Robot Anchoring and Locomotion under Cohesive Soil, pp. 828-833.</i>		
Liu, Bangyuan	Georgia Institute of Technology	
Ozkan-Aydin, Yasemin	Georgia Institute of Technology	
Goldman, Daniel	Georgia Institute of Technology	
Hammond III, Frank L.	Georgia Institute of Technology	
15:05-15:20	WeCT2.5	
<i>Simplifying Soft Robots through Adhesive-Backed Fabrics, pp. 834-839.</i>		
Miller-Jackson, Tiana	National University of Singapore	
Natividad, Rainier	National University of Singapore	
Yeow, Chen-Hua	National University of Singapore	
15:20-15:35	WeCT2.6	
<i>A Reconfigurable Crawling Robot Driven by Electroactive Artificial Muscle, pp. 840-845.</i>		
Cao, Chongjing	University of Bristol	
Diteesawat, Richard Suphapol	University of Bristol	
Rossiter, Jonathan	University of Bristol	
Conn, Andrew	University of Bristol	