



Program of
3DBODY.TECH 2017
**8th International Conference and Exhibition on
3D Body Scanning and Processing Technologies**
Montreal QC, Canada, 11-12 Oct. 2017
www.3dbody.tech/2017

Organizer

Hometrica Consulting - Dr. Nicola D'Apuzzo
Ascona, Switzerland



CONFERENCE PROGRAM



8th 3DBODY.TECH Conference & Expo Montréal, Québec, Canada · 11-12 October 2017

Organized by HOMETRICA CONSULTING · Switzerland

www.3dbody.tech/2017

Program Outline

3DBODY.TECH 2017 8 th International Conference and Exhibition on 3D Body Scanning and Processing Technologies Montreal, Quebec, Canada, 11-12 October 2017, www.3dbody.tech/2017				
Time	Wednesday 11 th October 2017		Thursday 12 th October 2017	
08:00	Registration		Exhibition Setup	Registration
09:00	Opening Session		Exhibition	Technical Session 7 Anthropometry & Scan Data Processing
10:00				Technical Session 8 3D Technologies for Apparel I
	Coffee Break			Coffee Break
11:00	Technical Session 1 Full Body Scanning in Medicine & Health	Technical Session 2 Body Scanning for Apparel I	Exhibition	Technical Session 9 Medical Applications II
12:00	Poster Session & Live Demonstrations			Technical Session 10 3D Full Body Scanning Systems II
13:00	Lunch Break			Lunch Break
14:00	Lunch Break			
15:00	Technical Session 3 3D Scanning Systems	Technical Session 4 Body Scanning for Apparel II	Exhibition	Technical Session 11 Body Scanning with Clothes On
16:00	Coffee Break			Technical Session 12 3D Technologies for Apparel II
17:00	Technical Session 5 Medical Applications I	Technical Session 6 3D Full Body Scanning Systems I		Coffee Break
18:00				Technical Session 13 Scanning Methods & Technologies
				Technical Session 14 3D Body Processing
				Closing Session
				Exhibition Breakdown

Conference Office

Conference office: HOMETRICA CONSULTING - Dr. Nicola D'Apuzzo
Via Collegio 28, CH-6612 Ascona, Switzerland
Conference website: www.3dbody.tech info@3dbody.tech
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Wednesday 11th October 2017

08:00-09:30 **Registration** – Welcome Desk

09:30-10:30 **Opening Session** – Room C

Session Chair: Dr Nicola D'APUZZO
Hometrica Consulting, Switzerland

09:30 Welcome Speech from the Conference Director
Nicola D'APUZZO
Hometrica Consulting, Switzerland

09:45 Welcome Speech from the Local Conference Partner
Marie-Eve FAUST
ESG - UQAM, Montreal QC, Canada

09:50 Announcements / New Products / Premieres from the Exhibitors
The New Size Stream SS20 3D Body Scanner and New Software Tools/Apps, Size Stream LLC, Cary NC, USA
3dMDface.t desktop - High Volume Capture of Facial Movements to Support Custom Faceware Products, 3dMD Ltd, Atlanta GA, USA
A Milestone for Medicine: The Cooperation between botspot and the World's Largest Prosthesis Manufacturer, botspot GmbH, Germany
High Quality Data-Driven 3D Reconstruction - IBV Capabilities, Instituto de Biomecánica de Valencia, Valencia, Spain
The New Styku S400 3D Full Body Scanner with 4 Intel RealSense Cameras, Styku LLC, Los Angeles CA, USA
VITRONIC and VITUS BODYSCAN, Vitronic GmbH, Germany
Your Scan Has Been Captured - What's Next?, Human Solutions of North America Inc., Morrisville NC, USA
Challenges in Measuring Upper Extremities for Medical Applications, Anatomic Metrix, Montreal QC, Canada

10:30-11:00 **Coffee Break** – Foyer

11:00-12:30 **Technical Session 1: Full Body Scanning in Medicine & Health** – Room B

S. Chair: Prof Marek KRAWCZUK
Gdansk University of Technology, Poland

11:00 The Usefulness of a 3D Whole-Body Scanner for Uncommon Cosmetic Surgery Procedures
David B. STEFAN¹, David A. GILBERT²
1 Novaptus Systems, Inc. Chesapeake VA, USA;
2 The Hague Plastic and Cosmetic Surgery Center, Norfolk VA, USA #52

11:22 3-D Body Volume Measurements for Cardio-Metabolic Risk Assessment
Richard BARNES¹, Jose MEDINAINOJOSA².
1 Select Research Ltd, Malvern, UK;
2 Dept. of Cardiovascular Medicine, Division of Preventive Cardiology, Mayo Clinic, Rochester MN, USA #64

11:45 Exploration of Human Ageing by 3D-Laser Scanning Anthropometry
Henry LÖFFLER-WIRTH^{1,2}, Alexander FRENZEL¹, Markus LOEFFLER^{1,2,3}, Hans BINDER^{1,2}
1 Interdisciplinary Centre for Bioinformatics, Leipzig University, Leipzig, Germany;
2 LIFE, Leipzig Research Center for Civilization Diseases; Leipzig University, Leipzig, Germany
3 Institute for Medical Informatics, Statistics and Epidemiology, Leipzig University, Leipzig, Germany #48

11:00-12:30 **Technical Session 2: Body Scanning for Apparel I** – Room C

Session Chair: Prof Osmud RAHMAN
School of Fashion, Ryerson University, Canada

11:00 From 3D Scans to Haptic Models: Apparel Design with Half Scale Dress Forms
Susan P. ASHDOWN¹, Arzu VURUSKAN²
1 Dept. of FSAD, Cornell University, Ithaca NY, USA;
2 Izmir University of Economics, Izmir, Turkey #54

11:22 From 3D Scan to Branding Journey
Nathon KONG
Nathon Kong, Montreal QC, Canada #40

11:45 Not All Body Scanning Measurements Are Valid: Perspectives from Pattern Practice
Simeon GILL, Maryam AHMED, Christopher J. PARKER, Steven G. HAYES
The University of Manchester, Manchester, UK #24

12:08 Producing Bespoke Apparel Patterns at Scale Using 3D Scanners and Data Mining
Marc C. CLOSE
Bespokify, Hong Kong #01

12:30-13:30 Poster Session & Live Demonstrations – Foyer

12:30 Cloud Services for Processing 3D Full Body Scans

Live Yannick FRANCKEN, Stijn LIGOT

Demo 3D Body Cloud, Antwerpen, Belgium #68

12:30 Tailor2Go - A Mobile Boutique, Solar-Powered and Fully Integrated with a Built-in 3D Body Scanner

Live Nathon KONG

Demo Nathon Kong, Montreal QC, Canada #40

12:30 Structure Sensor & SDK - The Spatial Computing & 3D Scanning Solution for Mobile

Live Mark PISZCZOR

Demo Occipital Inc., San Francisco CA, USA #69

12:30 Deep Learning based Aesthetic Evaluation of State-Of-The-Art 3D Reconstruction Techniques

Gernot STUEBL, Christoph HEINDL, Harald BAUER, Andreas PICHLER

PROFACTOR GmbH, Steyr-Gleink, Austria #18

12:30 Innovative Applications of Fringe Pattern Projection

Dong HE^{1,2}, Hailong CHEN^{1,2}, Nan CHENG¹, Bo PENG¹, Menglong LIU¹, Kaibing XIANG¹, Xiaoli LIU², Xiang PENG^{1,2}

1 Shenzhen ESUN Co. Ltd., Shenzhen, China;

2 College of Optoelectronic Engineering, Shenzhen University, Shenzhen, China #47

12:30 Evaluation of Body Surface Area Formulae Based on 3D Body Scans

Grzegorz REDLARSKI, Marek KRAWCZUK, Aleksander PALKOWSKI

Department of Mechatronics and High Voltage Engineering, Gdansk University of Technology, Gdansk, Poland #15

12:30 Application of 3D Whole Body Scanning in Research on Human Body Surface Area

Grzegorz REDLARSKI, Marek KRAWCZUK, Aleksander PALKOWSKI

Department of Mechatronics and High Voltage Engineering, Gdansk University of Technology, Gdansk, Poland #16

12:30 Development of Shape Changing Human Body Mannequins: A Case Study

Hans PRIKS

IMS Lab, Institute of Technology, University of Tartu, Tartu, Estonia #67

12:30 The Study on Fitting Dress' Comfort of Vocality Performer Based 3D Technology

Zifei LI, Huanyun WEI, Li ZHOU

College of Textile & Garment, Southwest University, Chongqing, China #26

12:30 Virtual Garment Intelligent Design

LinXu PAN¹, Huanyun WEI², Li ZHOU^{1,2}

1 College of Textile & Garment, Southwest University, Chongqing, China;

2 Chongqing Biomass Fiber Materials and Modern Textile Engineering Technology Research Center, Chongqing, China #34

12:30 Research on Optimal Efficiency of Data in Pattern Design

Caisen HUANG, Chunshan DENG, Li ZHOU

College of Textile & Garment, Southwest University, Chongqing, China #62

12:30 Study of Fashion Accessories Design Based on 3D Printing Technology

Siyu CHEN, Huanyun WEI, Li ZHOU

College of Textile & Garment, Southwest University, Chongqing, China #61

13:30-15:00 Lunch Break

15:00-16:30 Technical Session 3: 3D Scanning Systems – Room B

Session Chair: Dr Harvey MITCHELL
University of Newcastle, Australia

15:00 Challenges in Measuring Upper Extremities for Medical Applications

Jean-Pierre GIBEAULT

Anatomi Metrix, Montreal QC, Canada #03

15:22 Active 3D Imaging Based on White Light Scanning: from Single Sensor to Sensor Networks

Xiang PENG^{1,2}, Hailong CHEN^{1,2}, Dong HE², Xiaoli LIU¹, Bo PENG², Nan CHENG²

1 College of Optoelectronic Engineering, Shenzhen University, Shenzhen, China;

2 Shenzhen ESUN Co. Ltd., Shenzhen, China #43

15:45 Portable Scanner of a 3D Surface of a Curvilinear Object

Konstantin KARAVAEV, Maxim TRUPHANOV

Elasizer, Kirov, Russia #11

15:00-16:30 Technical Session 4: Body Scanning for Apparel II – Room CSession Chair: Dr Chris PARKER
The University of Manchester, UK

- 15:00 Correspondence of Breast Measurements for Bra Design After Reconstruction Surgery
Krista M. NICKLAUS^{1,2}, Jevon CHU¹, Chi LIU^{1,3}, Greg P. REECE²,
Fatima A. MERCHANT⁴, Michelle C. FINGERET^{2,5}, Mia K. MARKEY^{1,6}
1 Department of Biomedical Engineering, The University of Texas at Austin, Austin TX, USA;
2 Department of Plastic Surgery, The University of Texas MD Anderson Cancer Center, Houston TX, USA;
3 Apparel and Art Design College, Xi'an Polytechnic University, Xi'an, P.R. China;
4 Department of Engineering Technology, University of Houston, Houston TX, USA;
5 Department of Behavioral Science, The University of Texas MD Anderson Cancer Center, Houston TX, USA;
6 Department of Imaging Physics, The University of Texas MD Anderson Cancer Center, Houston TX, USA #27
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- 15:22 Reimagining Design of Golf Clothing: Addressing the Asymmetrical Pose
Arzu VURUSKAN¹, Susan ASHDOWN²
1 Izmir University of Economics, Izmir, Turkey;
2 Cornell University, Ithaca NY, USA #30
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- 15:45 Fostering Student Engagement: Participatory and Experiential Pedagogy for 3D Technology Integration
Caron PHINNEY
School of Fashion, Ryerson University, Toronto ON, Canada #53
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- 16:08 A Method to Develop a Personalized Pattern of Pant from 3D Scanning Data
Junqiang SU¹, Ying KE¹, Bingfei GU², Caiyuan KUANG³
1 School of Textile and Clothing, Jiangnan University, Jiangsu, China;
2 Fashion College, Zhejiang Sci-Tech University, Zhejiang, China;
3 College of Art, Jinling Institute of Technology, Jiangsu, China #05

16:30-17:00 Coffee Break – Foyer**17:00-18:30 Technical Session 5: Medical Applications I – Room B**Session Chair: Prof Mia MARKEY
The University of Texas at Austin, USA

- 17:00 Quantitative Analysis of Localized Changes in Breast Shape
Audrey L. CHEONG¹, Gregory P. REECE², Mia K. MARKEY^{3,4}, Michelle C. FINGERET^{2,5}, Fatima A. MERCHANT^{1,6}
1 Department of Electrical and Computer Engineering, University of Houston, Houston TX, USA;
2 Department of Plastic Surgery, The University of Texas MD Anderson Cancer Center, Houston TX, USA;
3 Department of Biomedical Engineering, The University of Texas at Austin, Austin TX, USA;
4 Department of Imaging Physics, The University of Texas MD Anderson Cancer Center, Houston TX, USA;
5 Department of Behavioral Science, The University of Texas MD Anderson Cancer Center, Houston TX, USA;
6 Department of Engineering Technology, University of Houston, Houston TX, USA #32
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- 17:22 3D Body Scanning – An Important Tool for Digital Archiving of Cosmetic Surgery Procedures
David B. STEFAN¹, David A. GILBERT²
1 Novaptus Systems, Inc. Chesapeake VA, USA;
2 The Hague Plastic and Cosmetic Surgery Center, Norfolk VA, USA #50
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- 17:45 Analysing Single Photographic Images using Shape-From-Shading to Quantify Human Breast Profiles
Harvey MITCHELL
School of Engineering, University of Newcastle, Newcastle, Australia #33
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- 18:08 Three-Dimensional Stereophotogrammetric Analysis of Adults Affected by Dravet Syndrome
Valentina PUCCIARELLI¹, Elena PIAZZA^{2,3}, Francesca RAGONA², Daniele GIBELLI¹,
Tiziana GRANATA², Claudia DOLCI¹, Chiarella SFORZA¹
1 Dipartimento di Scienze Biomediche per la Salute, Università degli Studi di Milano, Milano, Italy;
2 Dipartimento di Neuroscienze Pediatriche, Istituto Neurologico C. Besta, Milano, Italy;
3 Dipartimento di Neuropsichiatria Infantile, Istituto Neurologico C. Mondino, Pavia, Italy #21

17:00-18:30 Technical Session 6: 3D Full Body Scanning Systems I – Room CSession Chair: Dr Junfeng PENG
Decathlon SA, France

- 17:00 Size Stream 3DBODY.TECH
David BRUNER
Size Stream LLC, Cary NC, USA #04
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- 17:22 4D Body Scanners which Support Best of Breed Application Integration Needed in Product Innovation
Chris LANE
3dMD Ltd., London/Atlanta GA, UK/USA #55
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- 17:45 Scanning is Just the Beginning...Software Makes the Difference
Tim GUENZEL
Human Solutions of North America Inc., Morrisville NC, USA #39
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- 18:08 Unification Process for Uniforms with Use of 3D Body Scanning
Łukasz MARKIEWICZ¹, Elżbieta MIELICKA², Gabriel WASILEWSKI³,
Krzysztof MULARCZYK¹, Lidia NAPIERALSKA², Robert SITNIK¹
1 Warsaw University of Technology, Mechatronics Faculty, Warsaw, Poland;
2 Textile Research Institute, Knitting and Clothing Research Department, Lodz, Poland;
3 Medcore Sp. z o.o., Warsaw, Poland #44

Thursday 12th October 2017

08:00-09:00 Registration – Welcome Desk

09:00-10:30 Technical Session 7: Anthropometry & Scan Data Processing – Room B

Session Chair: David STEFAN
Novaptus Systems Inc., USA

09:00 Automatic Detection of Body Landmarks in Human Body Scans – Lower Limb Analysis for Biomedical and Footwear Applications
Alessandra TURSI, Gregorij KURILLO, Ruzena BAJCSY
University of Berkeley, Berkeley CA, USA #29

09:22 Torso Shape Extraction from 3D Body Scanning Data using Automatic Segmentation Tool
Ola AHMAD^{1,2}, Philippe DEBANNÉ^{1,2}, Stefan PARENT², Hubert LABELLE², Farida CHERIET^{1,2}
1 Polytechnique Montréal, Montreal, Canada;
2 CHU Saint-Justine, Montreal, Canada #23

09:45 Segmentation of 3D Full Body Scans for Posture Analysis and Anatomical Interaction
Andrew AUBREY
3dMD Ltd., Atlanta GA, USA #66

09:00-10:30 Technical Session 8: 3D Technologies for Apparel I – Room C

Session Chair: Dr Fatma BAYTAR
Cornell University, USA

09:00 An Exploratory Study of Clothing Fit for Male Consumers: Body Type, Clothing Fit and Anthropometric Scan Data
Osmud RAHMAN, Henry NAVARRO
Ryerson University, Toronto ON, Canada #06

09:22 NATO Research Task Group: 3D Scanning for Clothing Fit and Logistics
Allan KEEFE¹, James KUANG², Hein DAANEN³
1 Defence Research and Development Canada - Toronto Research Centre, Toronto, Canada;
2 Department of National Defence, Canada;
3 Vrije University Amsterdam, Amsterdam, The Netherlands #35

09:45 Online Virtual Fit is not yet Fit for Purpose: An Analysis of Fashion e-Commerce Interfaces
Monika JANUSZKIEWICZ, Christopher J. PARKER, Steven G. HAYES, Simeon GILL
The University of Manchester, Manchester, UK #22

10:08 Fast, Portable and Low-Cost 3D Foot Digitizers: Validity and Reliability of Measurements
Alfredo BALLESTER, Ana PIÉROLA, Eduardo PARRILLA, Mateo IZQUIERDO, Jordi URIEL, Beatriz NÁCHER, Vicent ORTIZ, Juan C. GONZÁLEZ, Álvaro F. PAGE, Sandra ALEMANY
Instituto de Biomecánica de Valencia, Universidad Politécnica de Valencia, Valencia, Spain #37

10:30-11:00 Coffee Break – Foyer

11:00-12:30 Technical Session 9: Medical Applications II – Room B

Session Chair: Dr Fatima MERCHANT
University of Houston, USA

11:00 Third-Based Facial Similarities and Differences of Monozygotic Twins: A Stereophotogrammetric 3D Assessment
Valentina PUCCIARELLI¹, Daniele GIBELLI¹, Danilo DE ANGELIS², Pasquale POPPA², Marco CUMMAUDO², Marina CODARI³, Claudia DOLCI¹, Chiarella SFORZA¹
Fien BURG², Saartje DUERINCK², Jan SIJBERS¹, Toon HUYSMANS¹
1 Dipartimento di Scienze Biomediche per la Salute, Università degli Studi di Milano, Milano, Italy;
2 LABANOF - Laboratorio di Antropologia e Odontologia Forense, Sezione di Medicina Legale, Dipartimento di Scienze Biomediche per la Salute, Università degli Studi di Milano, Milano, Italy;
3 Unit of Radiology, IRCCS Policlinico San Donato, San Donato Milanese, Milan, Italy #19

11:22 Three-dimensional Thermal Imaging in Medicine
Adam CHROMY, Ludek ZALUD
CEITEC - Central European Institute of Technology, Brno University of Technology, Brno, Czech Republic #17

11:45 A Survey of Measurement Templates used for Assessing Pre-Operative Body Contours and Evaluating Cosmetic Surgery Results using a 3D Whole-Body Scanner
David B. STEFAN¹, David A. GILBERT²
1 Novaptus Systems, Inc. Chesapeake VA, USA;
2 The Hague Plastic and Cosmetic Surgery Center, Norfolk VA, USA #49

12:08 Mirroring Procedures for the Assessment of Asymmetry of Different Anatomical Structures of the Cranium: A Protocol Based on 3D-3D Superimposition
Daniele GIBELLI¹, Valentina PUCCIARELLI¹, Marina CODARI², Luca PISONI¹, Claudia DOLCI¹, Chiarella SFORZA¹
1 Dipartimento di Scienze Biomediche per la Salute, Università degli Studi di Milano, Milano, Italy;
2 Unit of Radiology, IRCCS Policlinico San Donato, San Donato Milanese, Milan, Italy #20

11:00-12:30 **Technical Session 10: 3D Full Body Scanning Systems II – Room C**

Session Chair: Prof Xiang PENG
Shenzhen ESUN Display Co.Ltd, China

11:00 Styku Insight: Exploring Collaborative Opportunities with Styku's New API and Analytics Portal
Raj SAREEN
Styku LLC, Los Angeles CA, USA #41

11:22 Applications for a Laser Triangulated Bodyscanning Solution
Julian MARTINI
VITRONIC Dr.-Ing. Stein Bildverarbeitungssysteme GmbH, Wiesbaden, Germany #58

11:45 3D-Scanning: Why Time Matters - The Difference Between Slow and Fast
Manfred OSTERMEIER
botspot GmbH, Berlin, Germany #63

12:30-14:00 **Lunch Break**

14:00-16:00 **Technical Session 11: Body Scanning with Clothes On – Room B**

Session Chair: Dr Harvey MITCHELL
University of Newcastle, Australia

14:00 New Improvements to Millimeter-Wave Body Scanners
Douglas MCMAKIN, David SHEEN, Thomas HALL, Jonathan TEDESCHI, A. Mark JONES
Pacific Northwest National Laboratory, Richland WA, USA #45

14:24 BodiData's Multi-Sensors Handheld 3D Body Scanner
Tuoc LUONG, Albert CHARPENTIER, Michael BOYLAN, Young HARVILL
BodiData Inc., Sunnyvale CA, USA #12

14:48 Towards Automatic Human Body Model Fitting to a 3D Scan
Alexandre SAINT1, Abd El Rahman SHABAYEK1,2, Djamila AOUADA1,
Björn OTTERSTEN1, Kseniya CHERENKOVA3, Gleb GUSEV3
1 Interdisciplinary Centre for Security, Reliability, and Trust, University of Luxembourg, Luxembourg, Luxembourg;
2 Computer Science department, Faculty of Computers and Informatics, Suez Canal University, Egypt;
3 Artec Europe S.à.r.l., Luxembourg, Luxembourg #51

15:12 A Model-based Approach to Rapid Estimation of Body Shape and Postures Using Low-Cost Depth Cameras
Byoung-Keon D. PARK, Matthew P. REED
University of Michigan, Transportation Research Institute, Ann Arbor MI, USA #09

15:36 Shape Customisation of Human Subjects Based on Human Parsing Technology
Shuaiyin ZHU, Yanghong ZHOU, P.Y. MOK
Institute of Textiles and Clothing, The Hong Kong Polytechnic University, Hungghom, Hong Kong #36

14:00-16:00 **Technical Session 12: 3D Technologies for Apparel II – Room C**

Session Chair: Dr Junqiang SU
Jiangnan University, China

14:00 The Digital (R)evolution - Solutions to Drive through Tumults Times
Sabrina COVE
EFI Optitex, New York NY, USA #42

14:24 Slow Adoption of Technology in the Apparel Manufacturing Industry's Implementation of Mass Customization
Jocelyn BELLEMARE
University of Quebec in Montreal (UQAM), Department of Management & Technology Management, Montreal QC, Canada #60

14:48 3D Body Scanning has Suitable Reliability: An Anthropometric Investigation for Garment Construction
Christopher J. PARKER, Simeon GILL, Steven G. HAYES
The University of Manchester, Manchester, UK #02

15:12 *Panel Discussion: Retail & 3D Tech: Bridging the Gap*
Stephen CROSSLAND1, Joe DIXON2, Mark PISZCZOR3, Sabrina COVE4, Elizabeth STEFANKA5
1 Point Vision LLC, Pittsburgh PA, USA;
2 Size Stream LLC, Cary NC, USA;
3 Occipital Inc., San Francisco CA, USA;
4 EFI Optitex, New York NY, USA;
5 STEFANKA, Montreal QC, Canada #65

16:00-16:30 **Coffee Break – Foyer**

16:30-18:00 **Technical Session 13: Scanning Methods & Technologies** – Room B

Session Chair: Prof Tomislav PRIBANIC
University of Zagreb, Croatia

16:30 Multi-Projector Multi-Camera Structured Light 3D Body Scanner
Tomislav PETKOVIĆ¹, Tomislav PRIBANIĆ¹, Matea ĐONLIĆ¹, Nicola D'APUZZO²
1 University of Zagreb, Faculty of Electrical Engineering and Computing, Zagreb, Croatia;
2 Hometrica Consulting, Ascona, Switzerland #13

16:52 High Speed Measurement for Handheld 3D Imaging System Based on Triple Epipolar Constraint
Qijian TANG¹, Xiaoli LIU¹, Yang YANG¹, Chang LIU¹, Menglong LIU², Kaibing XIANG², Xiang PENG^{1,2}
1 Key Laboratory of Optoelectronic Devices and Systems of Ministry of Education and Guangdong Province,
College of Optoelectronic Engineering, Shenzhen University, Shenzhen Guangdong, China;
2 Shenzhen ESUN Co. Ltd., Shenzhen Guangdong, China #46

17:15 Design and Development of a Rotary 3D Scanner for Human Body Scanning
Khalil KHALILI, Mojtaba ZERAATKAR
Mechanical Engineering, University of Birjand, Birjand, Iran #08

16:30-18:00 **Technical Session 14: 3D Body Processing** – Room C

Session Chair: Dr David BRUNER
Size Stream LLC, USA

16:30 Working Group Progress for IEEE P3141 - Standard for 3D Body Processing
Carol MCDONALD¹, Luciano OVIEDO², Alfredo BALLESTER³
1 Gneiss Concept, Woodinville WA, USA;
2 Intel, Santa Clara CA, USA;
3 Instituto de Biomecánica, Universitat Politècnica de València, Valencia, Spain #14

16:52 Statistical Learning of Human Body through Feature Wireframe
Jida HUANG¹, Tsz-Ho KWOK², Chi ZHOU¹
1 Industrial and Systems Engineering, University at Buffalo, SUNY, Buffalo NY, USA;
2 Mechanical, Industrial and Aerospace Engineering, Concordia University, Montreal QC, Canada #25

17:15 Body Type Classification of the Three-Dimensional Torso Shape of Japanese Men Aged 20 to 70 Years for Efficient Clothing Design
Keiko WATANABE
Kyoto Women's University, Kyoto, Japan #31

17:38 Cloud Services for Processing 3D Full Body Scans
Yannick FRANCKEN, Stijn LIGOT
3D Body Cloud, Antwerpen, Belgium #68

18:00-18:15 **Closing Session** – Room B

18:00 Closing Speech and Announcements for 2018 from the Conference Director
Nicola D'APUZZO
Hometrica Consulting, Switzerland

Technical Exhibition

Wednesday 9:00 - Thursday 16:00

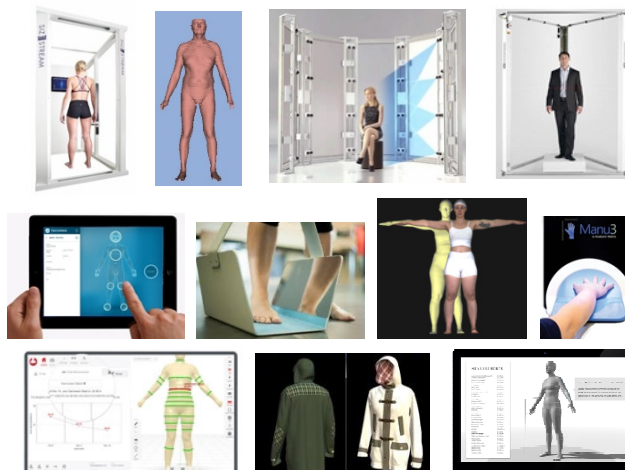
In the parallel exhibition, various manufacturers and/or resellers of equipment demonstrate live their 3D body scanning systems and software solutions.

Different scanning technologies are represented: white light scanning, laser scanning, RGB-D sensing, active and passive photogrammetry, 2D imaging.

Different systems are shown: full body scanners, face scanners, foot and hand scanners, tablet-based scanners, software solutions.

Different application sectors are represented: medical, apparel, fitness/health, anthropometry, ergonomics, GC & animation, 3D printing.

The attendees have to possibility to test live the systems and to meet and discuss directly with the manufacturers, developers and resellers.



List of Exhibitors

Size Stream (USA) – www.sizestream.com

Size Stream is focused on 3D color body scanning, 4D scanning and all related applications requiring high performance, high automation and cost effective solutions. Size Stream products are widely used for research, size prediction and custom fit specification of clothing, body measurement for health and fitness applications and color 3D printing applications.



Shape Analysis (UK) – www.shapeanalysis.com

Shape Analysis is the European distributor for Size Stream and Space Vision scanners and the worldwide exclusive distributor for CAESAR survey data. Services of Shape Analysis have been used for the national sizing surveys SizeUK, SizeGB and for many other companies involved in fashion, health, fitness, sportswear, medicine.



3dMD (USA/UK) – www.3dmd.com

3dMD, a proven leader in 3D high-precision anatomical scanning, will be demonstrating workflow efficiencies with its latest temporal-3D (4D) capture systems. 3dMD sequences of high-quality motion images of the full body, head, foot, and/or hand help promote and advance the creation of new wearable technologies that precisely adapt to a person's shape and enhance performance.



Human Solutions (Germany) – www.human-solutions.com

Human Solutions is a world market leader for body scanning and ergonomics simulation. Systems from Human Solutions are used by more than 300 companies worldwide. 3D body scanning by Human Solutions offers highly accurate method of measurement and allows the integration of size & fit data into various processes at the same time.



VITRONIC (Germany) – www.vitronic.com

With 20 years of experience in the field of body scanning, VITRONIC is among the pioneers of fast, automatic 3D measuring of the human body. VITUS body scanners are used around the world for customized clothing, standardization, ergonomics, orthopedics, sports medicine, and printing of 3D figurines.



botspot (Germany) – www.botspot.de

botspot produces and develops lightning-fast scanning-technology. The botscan 3D full body scanner generates pin-sharp scans and depicts even the tiniest details in the shortest time of less than 1/100th of a second. The modular construction of the scanner allows its adaption to any size, need and application.



Styku (USA) – www.styku.com

Styku is an innovative 3D body scanner that captures a person's true shape, renders an exact 3D model of that shape and extracts hundreds of precise body measurements within seconds using the world's most powerful 3D camera. Styku's digital technology has been proven to increase ROI in a range of industries including fitness, wellness, and fashion. A truly unique and effective way to extract body data.



Institute of Biomechanics IBV (Spain) – anthropometry.ibv.org

The Institute of Biomechanics IBV offers novel 3D data treatment tools (automated avatar creation, 3D databases harmonization, shape analysis, virtual tape measurement) and smartphone 3D scanning technologies to support innovative business models based on user anthropometry.



Bespokify (Singapore) – bespokify.com

Bespokify (Singapore) generates bespoke apparel patterns in seconds, no matter the body type or product design. Bespokify's API fully automates custom pattern creation from 3D body scans or hand measurements, which can be cut straight to fabric within seconds of an order being placed.



TechMed 3D (Canada) – www.techmed3d.com

TechMed 3D is specialized in body measurement technologies and digital imaging solutions adapted to the orthotics, prosthetics and custom equipment market. 3D surface imaging devices and application software will be demonstrated at the exhibition.



Anatomi Metrix (Canada) – www.manu3lab.com

Anatomi Metrix is focused on the development of technologies, devices and protocols dedicated to the anatomical measurements and evaluation of conditions of the human hand. Manu3 is a touch-less portable desktop device to measure the dimensions of the hand and fingers in terms of lengths and circumferences.



Elasizer (Russia) – www.elasizer.com

Elasizer offers an easy 3D body scanning technology based on a special elastic measuring suit - A compromise between expensive measuring rigs and low cost methods. This solution allows new ways to make a tailor and a customer closer to each other.



IEEE-SA (USA) – standards.ieee.org

The IEEE-SA is a leading consensus building organization that nurtures, develops and advances global technologies. IEEE standards drive the functionality, capabilities and interoperability of a wide range of products and services that transform the way people live, work and communicate, including IEEE's Industry Connections program on 3D Body Processing.



List of Sponsors

Pixel Light Effects (Canada/China) – pixellighteffects.com

Pixel Light Effects, based in Vancouver and Beijing, is specialized in 3D scanning for visual effects. Services include digitaldouble, prop and environment 3D scanning. The truck-mounted mobile system offers services at client's location and instant capture. PLE also provides customized hardware and software solutions.



ESUN 3D+ (China) – es-3dplus.com

ESUN 3D+ is affiliated to Shenzhen ESUN Display. ESUN 3D+ has developed many market-oriented 3D equipment, including 3D full body scanner, 3D head&face scanner, 3D photo booth, etc. Combined with self-developed post-processing software, ESUN 3D+ systems can easily fit in various application areas, including VR E-commerce, tailored clothing, 3D printed figurine, product design.



3DBodyCloud (Belgium) – 3dbodycloud.com

3DBodyCloud is a software company that offers cloud services for processing 3D full body scans. 3DBodyCloud's API supports back offices by offering automated processing pipelines to turn raw 3D scans into producible and/or publishable results, such as 3D printed figurines, 2.5D products, rigged models and animation videos.



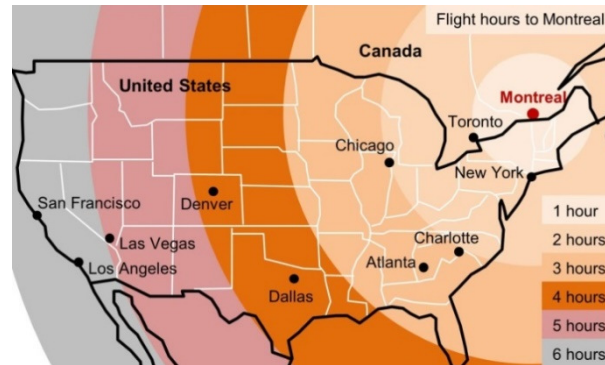
HOMETRICA CONSULTING (Switzerland) – www.hometrica.ch

Hometrica Consulting - Dr. Nicola D'Apuzzo is organizing the series of 3DBODY.TECH Conference and Expo on 3D Body Scanning and Processing. Hometrica Consulting is a leading international consulting firm in the sectors of 3D human body scanning technologies.

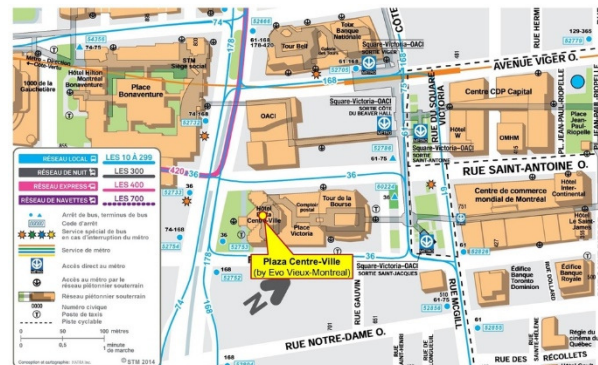


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