

Workshop II: Shape Analysis

Monday April 15, 2019

- 8:00–8:55 *Check-in/Breakfast (hosted by IPAM)*
- 8:55–9:00 *Welcome & Opening Remarks: Dean Miguel García-Garibay (Dean of Physical Sciences, UCLA) and Dima Shlyakhtenko (Director, IPAM)*
- 9:00–9:50 **Leonidas Guibas** (Stanford University)
Shape Differences and Variability
- 10:00–10:15 *Break*
- 10:15–11:05 **Justin Solomon** (Massachusetts Institute of Technology)
Volumetric Challenges in Shape Analysis
- 11:15–11:30 *Break*
- 11:30–12:20 **Pierre Alliez** (Institut National de Recherche en Informatique Automatique (INRIA))
Selective Padding for Polycube-Based Hexahedral Meshing
- 12:30–2:00 *Lunch (on your own)*
- 2:00–2:50 **Daniel Cremers** (Technische Universität München)
Elastic Shape Matching: Combinatorial versus Direct Approaches
- 3:00–3:15 *Break*
- 3:15–4:05 **Niloy Mitra** (University College London)
Data-driven Editable 3D Content Creation
- 4:15–6:00 *Poster Session & Reception (Hosted by IPAM)*

Tuesday April 16, 2019

- 8:00–9:00 *Check-in/Breakfast (hosted by IPAM)*
- 9:00–9:50 **Martin Rumpf** (Rheinische Friedrich-Wilhelms-Universität Bonn)
Principal geodesic analysis in the space of discrete shells
- 10:00–10:15 *Break*
- 10:15–11:05 **Dan Raviv** (Tel-Aviv University)
From non-rigid to null space
- 11:15–11:30 *Break*

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- 11:30–12:20 **Emanuele Rodola** (Sapienza University of Rome)
Isospectralization, or how to hear shape, style, and correspondence
- 12:30–2:00 *Lunch (on your own)*
- 2:00–2:50 **Helmut Pottmann** (King Abdullah Univ. of Science and Technology (KAUST))
Shape analysis and design for fabrication
- 3:00–3:15 *Break*
- 3:15–4:05 **Michael Bronstein** (Imperial College London)
Functional protein design using geometric deep learning
- 4:15–4:30 *Break*
- 4:30–5:20 **Omri Azencot** (University of California, Los Angeles (UCLA))
Functional Map and Bases Design via ADMM

Wednesday April 17, 2019

- 8:00–9:00 *Check-in/Breakfast (hosted by IPAM)*
- 9:00–9:50 **Mirela Ben Chen** (Technion - Israel Institute of Technology)
Robust non-isometric shape correspondence
- 10:00–10:15 *Break*
- 10:15–11:05 **Rongjie Lai** (Rensselaer Polytechnic Institute)
Non-isometric shape matching via geometric modeling and learning
- 11:15–11:30 *Break*
- 11:30–12:20 **Maks Ovsjanikov** (Ecole Polytechnique)
Some recent methods in non-rigid shape matching, with and without learning
- 12:30–2:00 *Lunch (on your own)*
- 2:00–2:50 **Alex Bronstein** (Technion - Israel Institute of Technology)
Learning deformable shape correspondence
- 3:00–3:15 *Break*
- 3:15–4:05 **Stanley Durrleman** (AramisLab - ICM Brain & Spine Institute – INRIA – ICM Centre for Neuroinformatics)
Geometrical Approaches in Statistical Learning for the Construction of Digital Models of the Human Brain

Thursday April 18, 2019

- 8:00–9:00 *Check-in/Breakfast (hosted by IPAM)*
- 9:00–9:50 **Thomas Funkhouser** (Google and Princeton University)
Learning Shape Templates using Structured Implicit Functions
- 10:00–10:15 *Break*
- 10:15–11:05 **Alain Trounev** (École Normale Supérieure de Cachan)
Modular large deformation and shape aware metrics in shape analysis
- 11:15–11:30 *Break*
- 11:30–12:20 **Vova Kim** (Adobe Systems Incorporated)
Geometry Representations for Analyzing, Processing, and Generating 3D Shapes with Neural Networks
- 12:30–2:00 *Lunch (on your own)*
- 2:00–2:50 **Stefano Soatto** (University of California, Los Angeles (UCLA))
Learning Geometry, and the Geometry of Learning
- 3:00–3:15 *Break*
- 3:15–4:05 **Leif Kobbelt** (RWTH Aachen University)
Encoding Geometry in Artificial Neural Networks

Friday April 19, 2019

- 8:00–9:00 *Check-in/Breakfast (hosted by IPAM)*
- 9:00–9:50 **Tingran Gao** (University of Chicago)
Gaussian Process Landmarking on Manifolds
- 10:00–10:15 *Break*
- 10:15–11:05 **David Xianfeng Gu** (Stony Brook University)
Shape Analysis Based on Computational Conformal Geometry
- 11:15–11:30 *Break*
- 11:30–12:20 **Shantanu Joshi** (University of California, Los Angeles (UCLA))
Elastic Hyper-alignment of Functional Data – Shapes and Signals
- 12:30 *Conclusion*

