

Shape Analysis and Learning by Geometry and Machine

Monday February 8, 2016

- 8:00–8:55 *Check-In/Light Breakfast (Hosted by IPAM)*
- 8:55–9:00 *Welcome and Opening Remarks*
- 9:00–9:25 **Hong-Kai Zhao** (University of California, Irvine (UCI))
Overview - Part 1
- 9:25–9:50 **Ron Kimmel** (Technion - Israel Institute of Technology)
Overview - Part 2
- 10:00–10:15 *Break*
- 10:15–11:05 **Alex Bronstein** (Tel Aviv University)
Deep Neural Networks with Random Gaussian Weights: A Universal Classification Strategy?
- 11:15–11:30 *Break*
- 11:30–12:20 **Daniel Cremers** (Technische Universität München)
Combinatorial Solutions to Elastic Shape Matching
- 12:30–2:30 *Lunch (on your own)*
- 2:30–3:20 **Mikhail Belkin** (Ohio State University)
Geometric Aspects of Optimization and Applications to Spectral Clustering
- 3:30–4:00 *Break*
- 4:00–4:50 **Mirela Ben Chen** (Technion - Israel Institute of Technology)
Vector Fields for Shape Analysis and Correspondence
- 5:00–6:30 *Poster Session & Reception (Hosted by IPAM)*

Tuesday February 9, 2016

- 8:00–9:00 *Continental Breakfast*
- 9:00–9:50 **Ron Kimmel** (Technion - Israel Institute of Technology)
A Spectral Perspective on Shapes
- 10:00–10:15 *Break*
- 10:15–11:05 **Alla Sheffer** (University of British Columbia)
Conveying and Analyzing Shapes: From Art to Science
- 11:15–11:30 *Break*

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- 11:30–12:20 **Michael Bronstein** (Universita della Svizzera Italiana)
Deep learning on geometric data with intrinsic convolutional neural networks
- 12:30–2:30 *Lunch (on your own)*
- 2:30–3:20 **Daniel Tenbrinck** (Westfälische Wilhelms Universität Münster)
Partial Difference Operators on Weighted Graphs for Point Cloud Processing - From 3D Surfaces to Machine Learning
- 3:30–4:00 *Break*
- 4:00–4:50 **Richard Tsai** (University of Texas at Austin)
An algorithm for computing line and surface integrals from point cloud data

Wednesday February 10, 2016

- 8:00–9:00 *Continental Breakfast*
- 9:00–9:50 **Leonidas Guibas** (Stanford University)
Networks of Shapes and Images
- 10:00–10:15 *Break*
- 10:15–11:05 **Hong-Kai Zhao** (University of California, Irvine (UCI))
Multiscale non-rigid point cloud registration
- 11:15–11:30 *Break*
- 11:30–12:20 **Michael Black** (Max Planck Institute for Intelligent Systems)
Learning Body Shape in Motion
- 12:30–2:30 *Lunch (on your own)*
- 2:30–3:20 **Yusu Wang** (Ohio State University)
Declutter and Resample: Towards parameter free denoising
- 3:30–4:00 *Break*
- 4:00–4:50 **Arthur Szlam** (Facebook)
Memory networks for unstructured data

Thursday February 11, 2016

- 8:00–9:00 *Continental Breakfast*
- 9:00–9:15 **Ingrid Daubechies** (Duke University)
Machine learning, fibre bundles and biological morphology: Introduction
- 9:15–9:50 **Tingran Gao** (Duke University)
Machine learning, fibre bundles and biological morphology
- 10:00–10:15 *Break*
- 10:15–11:05 **Yaron Lipman** (Weizmann Institute of Science)
Semidefinite Relaxations of Shape Matching Problems
- 11:15–11:30 *Break*
- 11:30–12:20 **Ronald Lok Ming Lui** (The Chinese University of Hong Kong)
Medical Morphometry using Quasiconformal Teichmuller Theory
- 12:30–2:30 *Lunch (on your own)*
- 2:30–3:20 **Bruno Levy** (Institut National de Recherche en Informatique Automatique (INRIA) - Lorraine)
What I understood about the principle of least action and its geometric aspects
- 3:30–4:00 *Break*
- 4:00–4:50 **Rongjie Lai** (Rensselaer Polytechnic Institute)
Solving Geometric PDEs on Manifolds Represented as Point Clouds and Applications

Friday February 12, 2016

- 8:00–9:00 *Continental Breakfast*
- 9:00–9:50 **Mariano Tepper** (Duke University)
All Together Now: Magical Mystery Consensus Grouping
- 10:00–10:15 *Break*
- 10:15–11:05 **David Gu** (SUNY Stony Brook)
Optimal Mass Transportation for Shape Analysis
- 11:15–11:30 *Break*

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- 11:30–12:20 **Zuoqiang Shi** (Qinghua (Tsing Hua) University)
Low dimensional manifold model for image processing
- 12:30–2:30 *Lunch (on your own)*
- 2:30–3:20 **Vladlen Koltun** (Intel Corporation)
TBA
- 4:00–4:50 **Shantanu Joshi** (University of California, Los Angeles (UCLA))
Shape Analysis of Surfaces using Intrinsic Coordinate Parameterizations

