Conference Guide

Geometric Modeling and Processing 2014
# Table of Contents

Welcome Message ............................................. 2
Program..................................................................... 3
  Program at a glance ............................................. 3
  Keynote speeches ................................................. 4
  Paper sessions...................................................... 7
Organization .......................................................... 12
General Information ............................................... 16
  Conference venue............................................... 16
  Travel .............................................................. 18
  Meals ............................................................. 24
  Internet access................................................... 25
Campus Map ......................................................... 26
Welcome Message

Geometric Modeling and Processing (GMP) is a biennial international conference series on geometric modeling, simulation and computing. The modeling and processing of geometric data is fundamental to many computer applications, including computer graphics, computer vision, CAD/CAM, medical imaging, robotics, computational engineering and scientific computing. The GMP conference provides researchers and practitioners with a stimulating forum for exchanging new ideas, discussing new applications and presenting novel solutions. Previous GMP conferences were held in Huangshan (2012), Castro Urdiales (2010), Hangzhou (2008), Pittsburgh (2006), Beijing (2004), Tokyo (2002), and Hong Kong (2000). This year the 8th GMP conference is held in Singapore, on June 29 - July 1, 2014.

There were 88 papers submitted to GMP 2014, covering a broad range of geometric modeling and processing topics, including curves and surfaces, medial axis, splines, differential geometry, shape deformation and synthesis, features and segmentation, shape registration, parameterization and meshing, images, as well as collision, motion and animation. This year the competition for acceptance was particularly tough. Each paper was carefully reviewed by several PC members and/or external reviewers. Each paper was individually reviewed and subsequently opened for discussion by its reviewers to encourage a debate and finding a consensus among reviewers. Based on the reviews and outcomes of these discussions, the paper co-chairs selected the best submissions to make GMP 2014 a successful and high-quality event. Of the 88 submissions, 28 papers were conditionally accepted, and 6 papers were recommended to Graphical Models, pending major revision. The conditionally accepted papers underwent another review cycle to ensure that the necessary revisions indicated in the reviews were carried out. This year the accepted papers are appearing in this special issue of Graphical Models. The conference also features three invited talks by Dr. Peter Lindstrom from Lawrence Livermore National Laboratory, Prof. Andrei Sharf from Ben-Gurion University, and Prof. Kun Zhou from Zhejiang University.

We wish to thank all authors and participants at the conference, the international program committee members, and the external reviewers, all of which made their best effort to ensure the high quality of the GMP 2014 technical program. We further thank Nanyang Technological University and Joint NTU-UBC Research Centre of Excellence in Active Living for the Elderly (LILY) for hosting the conference, and the local organizers, Frank Guan, Qian Sun, Benny Tan Toh Hsiang, and the student volunteers for their diligent work in organizing the conference. Our very special thanks go to the Editor-in-Chief Peter Lindstrom, the journal managers Ann Barajas and Lisa Savage, as well as the whole Elsevier support team who collected and prepared the final versions of the papers.

GMP’14 General Co-Chairs
Jianmin Zheng, NTU, Singapore
Kai Hormann, Università della Svizzera Italiana, Switzerland

GMP’14 Program Co-Chairs
Pierre Alliez, Inria, France
Ying He, NTU, Singapore
Yongjie Zhang, CMU, USA
# Program

## Program at a glance

### Day 1: June 29, 2014  Sunday

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 - 17:35</td>
<td>Registration</td>
</tr>
<tr>
<td>8:50 - 9:00</td>
<td>Opening</td>
</tr>
<tr>
<td>9:00 - 10:00</td>
<td>Keynote 1: Dr. Peter Lindstrom Compact Data Structures for Geometric Modeling (Chair: Jessica Zhang)</td>
</tr>
<tr>
<td>10:00-10:30</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>10:30-12:10</td>
<td>Session 1: Curves &amp; Medial Axis (Chair: Gershon Elber)</td>
</tr>
<tr>
<td>12:10-14:00</td>
<td>Buffet Lunch (Campus Clubhouse)</td>
</tr>
<tr>
<td>14:00-16:05</td>
<td>Session 2: Splines &amp; Surfaces (Chair: Kai Hormann)</td>
</tr>
<tr>
<td>16:05-16:35</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>16:35-17:50</td>
<td>Session 3: Differential Geometry (Chair: Xin Li)</td>
</tr>
</tbody>
</table>

### Day 2: June 30, 2014  Monday

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00-17:35</td>
<td>Registration</td>
</tr>
<tr>
<td>9:00-10:00</td>
<td>Keynote 2: Prof. Andrei Sharf Proactive 3D Scanning (Chair: Pierre Alliez)</td>
</tr>
<tr>
<td>10:00-10:30</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>10:30-12:10</td>
<td>Session 4: Shape Deformation &amp; Synthesis (Chair: Mario Botsch)</td>
</tr>
<tr>
<td>12:10-14:00</td>
<td>Buffet Lunch (Campus Clubhouse)</td>
</tr>
<tr>
<td>14:00-15:40</td>
<td>Session 5: Features &amp; Segmentation (Chair: Xiaohu Guo)</td>
</tr>
<tr>
<td>15:40-16:10</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>16:10-17:25</td>
<td>Session 6: Parameterization &amp; Meshes (Chair: Stefanie Hahmann)</td>
</tr>
<tr>
<td>18:30-21:30</td>
<td>Banquet (The Fullerton Hotel)</td>
</tr>
</tbody>
</table>

### Day 3: July 1, 2014  Tuesday

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00-17:05</td>
<td>Registration</td>
</tr>
<tr>
<td>9:00-10:00</td>
<td>Keynote 3: Prof. Kun Zhou Interactive Face and Hairs (Chair: Ying He)</td>
</tr>
<tr>
<td>10:00-10:30</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>10:30-12:10</td>
<td>Session 7: Images (Chair: Jianmin Zheng)</td>
</tr>
<tr>
<td>12:10-14:00</td>
<td>Buffet Lunch (Campus Clubhouse)</td>
</tr>
<tr>
<td>14:00-15:40</td>
<td>Session 8: Registration (Chair: Myung-Soo Kim)</td>
</tr>
<tr>
<td>15:40-16:10</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>16:10-17:00</td>
<td>Session 9: Collision &amp; Motion (Chair: Bert Juetl)</td>
</tr>
<tr>
<td>17:00-17:05</td>
<td>Closing Session</td>
</tr>
</tbody>
</table>

The conference proceedings are published in Graphical Models, Vol. 76, No. 5

http://www.sciencedirect.com/science/journal/15240703/76/5
Compact Data Structures for Geometric Modeling

Dr. Peter Lindstrom

Abstract: As high-performance and desktop computing are moving toward many-core architectures, memory bandwidth per core is becoming a scarce commodity, and feeding the data-starved cores is a major challenge. While cores are idly waiting for data to arrive, computation is essentially free and can be spent on reducing the data volume in order to bring the data more quickly to the processing units.

In this talk, I will discuss strategies toward alleviating the data movement bottleneck based on removing redundancy in the data representation. I will particularly focus on recent work by our research group on developing compact data structures and compression schemes for data such as meshes and scalar fields that are common in geometric modeling and processing. These strategies enable many-fold reductions in data size by inferring rather than storing redundant data, thereby accelerating geometry processing, data analysis, and simulation tasks in bandwidth limited settings.

Short Biography: Peter Lindstrom is a computer scientist and project leader in the Center for Applied Scientific Computing (CASC). His research interests include geometric modeling, geometry processing, data compression, multi-resolution and streaming methods, and scientific visualization.

Peter earned his Ph.D. in Computer Science from Georgia Institute of Technology in 2000 and holds B.S. degrees in Computer Science, Mathematics, and Physics from Elon University in North Carolina. He joined LLNL in 2000 and is currently a member of CASC’s Data Analysis group and ASC’s Visualization team. He previously served as principal investigator for the LOCAL project, and currently leads several research efforts on streaming data analysis, data locality and compression, and uncertainty visualization.

Peter is the Editor in Chief for the Elsevier journal Graphical Models.
Proactive 3D Scanning

Prof. Andrei Sharf

Abstract: The evolution of 3D scanning technologies together with the emergence of consumer depth cameras, have revolutionized the way real-world objects are acquired. Nowadays, high-definition and high-speed scanners can reconstruct large scale scenes with very high accuracy at interactive rates. Nevertheless, acquisition of complete objects remains challenging, requiring carefully sample and cover the whole surface. Thus, holes and undersampled regions still occur in complex shapes due to self-occlusions and hidden interiors.

In my talk, I will introduce the novel paradigm of proactive scanning, in which the user actively modifies the scene while scanning it. This makes a holistic approach which integrates user interaction into the continuous scanning process. I will show a method for interactively revealing and accessing occluded regions on-the-fly. The algorithm allows for dynamic modifications of the scene as part of a global 3D scanning process. At its core, scanned motions are classified into user interaction and global scene motions. Finally, we reconstruct together the static parts into a complete unified 3D model.

Short Biography: I am a faculty member at the Computer Science Department, Ben-Gurion University. Previous to that I was a Visiting Associate Professor at the Shenzhen Institute of Advanced Technology (SIAT) China. I did my PostDoc with Prof. Nina Amenta at the Institute for Data Analysis and Visualization (IDAV), University of California at Davis. My PhD was carried under the supervision of Prof. Daniel Cohen-Or and Prof. Ariel Shamir at the School of Computer Science, Tel-Aviv University.

My research is in the realm of Computer Graphics; I concentrate on geometry processing and 3D modeling. A major part of my research is focused on various techniques and algorithms for reconstruction and filtering of imperfect scanned data. I am also interested in interactive techniques, topology, parallel data structures on the GPU and large scale 3D urban modeling.
**Interactive Face and Hairs**

Prof. Kun Zhou

**Abstract:** Although realistic face/hair modeling and animation technologies have been widely used in computer generated movies, it remains challenging to deploy them in consumer-level applications such as computer games, social networks and other interactive applications. The main difficulties come from the requirement of special equipment, sensitivity to daily environments, laborious manual work and high computational costs. In this talk, I will introduce our research progress in making realistic face/hair more interactive and accessible to ordinary users. In particular, I will describe fully automatic approaches to real-time facial tracking and animation with a single web camera, methods for modeling hairs from images, and real-time algorithms for realistic hair simulation.

**Short Biography:** Kun Zhou is a Cheung Kong Professor and the Director of the State Key Lab of CAD&CG at Zhejiang University. Earlier, he was a Lead Researcher of the Internet Graphics Group at Microsoft Research Asia. He received his BS and PhD degrees from Zhejiang University in 1997 and 2002, respectively.

His research interests include geometry processing, photorealistic rendering, computer animation and GPU parallel computing. He has published more than 40 ACM SIGGRAPH/TOG papers and held over 20 patents in these areas. He is currently on the editorial boards of ACM Transactions on Graphics and The Visual Computer, and serves on the editorial advisory board of IEEE Spectrum.
## Paper sessions

### Session 1: Curves & Medial Axis

(Chair: Gershon Elber)

- Creases and Boundary Conditions for Subdivision Curves
  *Jiri Kosinka, Malcolm Sabin and Neil Dodgson*

- Computing a Compact Spline Representation of the Medial Axis Transform of a 2D Shape
  *Yanshu Zhu, Feng Sun, Yi-King Choi, Bert Juettler and Wenping Wang*

- Curvature-based Blending of Closed Planar Curves
  *Marianna Saba, Teseo Schneider, Kai Hormann and Riccardo Scateni*

- Total Curvature Variation Fairing for Medial Axis Regularization (GMOD Paper)
  *Florian Buchegger, Bert Juettler and Mario Kapl*

### Session 2: Splines & Surfaces

(Chair: Kai Hormann)

- Flexible Smooth Surface Interpolation of Quad Meshes (GMOD Paper)
  *Georges-Pierre Bonneau and Stefanie Hahmann*

- Adaptive CAD Model (Re-)construction with THB-splines
  *Gabor Kiss, Carlotta Giannelli, Urska Zore, Bert Juettler, David Grossmann and Johannes Baner*

- Hierarchical B-splines on Regular Triangular Partitions
  *Hongmei Kang, Falai Chen and Jiansong Deng*

- Line Accessibility of Free Form Surfaces
  *Aviv Segall, Jonathan Mizrahi, Yong Joon Kim and Gershon Elber*

- Self-intersections of Rational Bezier Curves
  *Chun-Gang Zhu and Xuan-Yi Zhao*

### Session 3: Differential Geometry

(Chair: Xin Li)

- The Unified Discrete Surface Ricci flow
  *Min Zhang, Wei Zeng, Ren Guo, Feng Luo, Shing-Tung Yau and Xianfeng Gu*

- Differential Geometry Properties of Lines of Curvature of Parametric Surfaces and Their Visualization (GMOD Paper)
  *Han Kyul Joo, Tatsuya Yazaki and Takashi Maekawa*

- Improved, Feature-Centric EMD for 3D Surface Modeling and Processing
  *Jianping Hu, Xiaochao Wang and Hong Qin*

### Session 4: Shape Deformation & Synthesis

(Chair: Mario Botsch)

- Mesh Resizing Based on Hierarchical Saliency Detection
  *Shixiang Jia and Caiming Zhang*

- A Model Synthesis Method Based on Single Building Facade
  *Yan Wen, Yan Zhang, Wentao Wu, Mofei Song and Zhengxing Sun*

- Creature Grammar for Creative Modeling of 3D Monsters
  *Xuekun Guo, Juncong Lin, Kai Xu and Xiaogang Jin*

- Zometool Shape Approximation
  *Henrik Zimmer, Florent Lafarge, Pierre Alliez and Leif Kobbelt*

### Session 5: Features & Segmentation

(Chair: Xiaohu Guo)

- 3D Ear Recognition Using Local Salience and Principal Manifold
  *Xiaopeng Sun, Guan Wang and Xiaopeng Wei*

- Multi-scale Geometric Detail Enhancement for Time-varying Surfaces
  *Long Yang, Chunxia Xiao and Jun Fang*

- Isogeometric Segmentation. Part II: On the Segmentability of Contractible Solids with Non-convex Edges
  *Bert Jüttler, Dang-Manh Nguyen and Michael Pauley*

- Spectral 3D Mesh Segmentation with a Novel Single Segmentation Field
<table>
<thead>
<tr>
<th>Hao Wang, Tong Lu, Oscar Kin-Chung Au and Chiew-Lan Tai</th>
</tr>
</thead>
</table>
| **Session 6: Parameterization & Meshes**  
(Chair: Stefanie Hahmann) |
| As-Rigid-As-Possible Spherical Parameterization  
Chunxue Wang, Zheng Liu and Ligang Liu |
| Anisotropic Surface Meshing with Conformal Embedding  
Zichun Zhong, Liang Shuai, Miao Jin and Xiaohu Guo |
| Feature-aligned Surface Parameterization Using Eigenfunction-based Cross Field (GMOD Paper)  
Tao Liao, Guoliang Xu and Yongjie Zhang |
| **Session 7: Images**  
(Chair: Jianmin Zheng) |
| A Graph-based Optimization Algorithm for Fragmented Image Reassembly  
Kang Zhang and Xin Li |
| Swendsen-Wang Cuts Sampling for Spatially Constrained Dirichlet Process Mixture Models  
Xiangrong Wang and Jieyu Zhao |
| A Global Energy Optimization Framework for 2.1D Sketch Extraction from Monocular Images  
Cheng-Chi Yu, Yong-Jin Liu, Tian-Fu Wu, Kai-Yun Li and Xiaolan Fu |
| Approximation by Piecewise Polynomials on Voronoi Tessellation  
Zhonggui Chen, Yanyang Xiao and Juan Cao |
| **Session 8: Registration**  
(Chair: Myung-Soo Kim) |
| Automatic Registration of Vestibular Systems with Exact Landmark Correspondence  
Minqi Zhang, Fang Li, Xingce Wang, Zhongke Wu, Shi-Qing Xin, Lok-Ming Lui, Ying He |
| Globally Consistent Rigid Registration  
Yuan Liu, Wen Zhou, Zhouwang Yang, Ligang Liu and Jiansong Deng |
| Deformable Registration using Patch-Wise Shape Matching  
Francesco Bonarrigo, Alberto Signoroni and Mario Botsch |
| An Efficient Volumetric Method for Non-rigid Registration (GMOD Paper)  
Ran Zhang, Xin Tong, Xuejin Chen and Ligang Liu |
| **Session 9: Collision & Motion**  
(Chair: Bert Juettler) |
| Continuous Collision Detection for Composite Quadric Models  
Yi-King Choi, Wenping Wang, Bernard Mourrain, Changhe Tu, Xiaohong Jia and Feng Sun |
| High-Precision Continuous Contact Motion for Planar Freeform Geometric Curves  
Yong-Joon Kim, Gershon Elber and Myung-Soo Kim |
GMOD Paper Abstracts

Total Curvature Variation Fairing for Medial Axis Regularization

Florian Buchegger, Bert Juettler and Mario Kapl

Abstract: We present a new fairing method for planar curves, which is particularly well suited for the regularization of the medial axis of a planar domain. It is based on the concept of total variation regularization. The original boundary (given as a closed B-spline curve or several such curves for multiply connected domains) is approximated by another curve that possesses a smaller number of curvature extrema. Consequently, the modified curve leads to a smaller number of branches of the medial axis. In order to compute the medial axis, we use the state-of-the-art algorithm from [1] which is based on arc spline approximation and a domain decomposition approach. We improve this algorithm by using a different decomposition strategy that allows to reduce the number of base cases from 13 to only 5. Moreover, the algorithm reduces the number of conic arcs in the output by approx. 50%.

Flexible Smooth Surface Interpolation of Quad Meshes

Georges-Pierre Bonneau and Stefanie Hahmann

Abstract: Transforming an arbitrary mesh into a smooth G1 surface has been the subject of intensive research works. To get a visual pleasing shape without any imperfection even in the presence of extraordinary mesh vertices is still a challenging problem in particular when interpolation of the mesh vertices is required. We present a new local method which improves the visual smoothness of the shape while solving the interpolation problem. It consists of combining low degree biquartic Bezier patches with minimum number of pieces per mesh face, assembled together with G1-continuity. All surface control points are given explicitly. The construction is local and free of zero-twists. We further show that within this economical class of surfaces it is however possible to derive a sufficient number of meaningful degrees of freedom so that standard optimization techniques result in high quality surfaces.
Irregular quad meshes interpolated by a G1-continuous surface composed of biquartic Bezier patches. Each object is composed of nine independent meshes representing the body and the face elements separately.

Differential Geometry Properties of Lines of Curvature of Parametric Surfaces and Their Visualization

Han Kyul Joo, Tatsuya Yazaki and Takashi Maekawa

Abstract: We present algorithms for computing the differential geometry properties of lines of curvature of parametric surfaces. We derive a unit tangent vector, curvature vector, binormal vector, torsion, and algorithms to evaluate their higher-order derivatives of lines of curvature of parametric surfaces. Among these quantities, it is shown that the curvature and its first derivative of the lines of curvature lend a hand for the formation of curved plates in shipbuilding. We also visualize the twist of lines of curvature, which enables us to observe how much the osculating plane of the line of curvature turns about the tangent vector.
Structure-aligned Guidance Estimation in Surface Parameterization Using Eigenfunction-based Cross Field

Tao Liao, Guoliang Xu and Yongjie Zhang

Abstract: In this paper, we present a structure-aligned approach for surface parameterization using eigenfunctions from the Laplace-Beltrami operator. Several methods are designed to combine multiple eigenfunctions using isocontours or characteristic values of the eigenfunctions. The combined gradient information of eigenfunctions is then used as a guidance for the cross field construction. Finally, a global parameterization is computed on the surface, with an anisotropy enabled by adapting the cross field to non-uniform parametric line spacings. By combining the gradient information from different eigenfunctions, the generated parametric lines are automatically aligned with the structural features at various scales.

An Efficient Volumetric Method for Non-rigid Registration

Ran Zhang, Xin Tong, Xuejin Chen and Ligang Liu

Abstract: We propose a novel efficient volumetric method for registering 3D shapes with non-rigid deformations. Our method uses the signed distance field to represent the input 3D shapes and registers the 3D shapes by minimizing the difference between their distance fields. With the assumption that the sampling points in each cell of the object volume follows the same rigid transformation, and the transformations of the sampling cells vary smoothly inside the object volume, a two-step method is used for the non-rigid registration. The first step is the local rigid alignment step, which minimizes the difference between source and target distance field of the sampling cell. The second step is the global non-rigid registration step, which minimizes the difference between transformations of adjacent cells to achieve a global deformation. Our method converges very fast for the optimization in a few iterations. We tested our method on several datasets. Experimental results demonstrate the robustness and efficiency of our method.
Organization

General Co-Chairs

Kai Hormann  Università della Svizzera Italiana, Lugano, Switzerland
Jianmin Zheng  Nanyang Technological University, Singapore

Program Co-Chairs

Pierre Alliez  INRIA - Sophia Antipolis, France
Ying He  Nanyang Technological University, Singapore
Jessica Zhang  Carnegie Mellon University, USA

Local Organization Team

Frank Guan  Chair
Qian Sun  Website
Tan Toh Hsiang Benny  Finance
Yusha Li  Volunteers
Juzheng Zhang
Yuzhe Zhang
Minqi Zhang
Xiaoning Wang

Steering Committee

Kai Hormann  Università della Svizzera Italiana, Lugano, Switzerland
Shimin Hu  Tsinghua University, China
Bert Juettler  Johannes Kepler University, Austria
Myung-Soo Kim  Seoul National University, Korea
Hiromasa Suzuki  University of Tokyo, Japan
Kenji Shimada  Carnegie Mellon University, USA
Wenping Wang  University of Hong Kong, China
Technical Program Committee

Marco Attene IMATI-GE/CNR
J. Andreas Bærentzen DTU Informatics
Alexander Belyaev Heriot-Watt University
Mirela Ben-Chen Technion - Israel Institute of Technology
David Bommes Inria Sophia Antipolis
Mario Botsch Bielefeld University
Pere Brunet UniversitatPolitecnica de Catalunya
Falai Chen University of Science and Technology of China
Jiajun Chen Zhejiang University
Jiansong Deng University of Science and Technology of China
Julie Digne Université Lyon 1 – CNRS
Gershon Elber Technion- Israel Institute of Technology
Chi Wing Fu Nanyang Technological University
Shuming Gao Zhejiang University
Xianfeng Guo Stony Brook University
Gaël Guennebaud INRIA Bordeaux Sud-Ouest
Xiaohu Guo University of Texas, Dallas
Klaus Hildebrandt Max-Planck-InstitutfürInformatik
Shi-Min Hu Tsinghua University
Jing Hua Wayne State University
Hui Huang Shenzhen Institute of Advanced Technology
Qixing Huang Stanford University
Alec Jacobson ETH Zurich
Xiangmin Jiao Stony Brook University
Miao Jin University of Louisiana
Joaquim Jorge Instituto Superior Técnico
Tao Ju Washington University in St. Louis
Bert Juettler Johannes Kepler University
Burak Kara Carnegie Mellon University
Michael Kazhdan Johns Hopkins University
Tae-Wan Kim  Seoul National University
Myung-Soo Kim  Seoul National University
Jiri Kosinka  University of Cambridge
Yu-Kun Lai  Cardiff University
Guillaume Lavoué  INSA-Lyon
Joshua Levine  Clemson University
Xin Li  Louisiana State University
Yang Liu  Microsoft Research Asia
Ligang Liu  University of Science and Technology of China
Yong-Jin Liu  Tsinghua University
Ralph Martin  Cardiff University
M. Gopi  University of California, Irvine
Kenjiro Miura  Shizuoka University
Yutaka Ohtake  University of Tokyo
MaksOvsjanikov  EcolePolytechnique
Daniele Panozzo  ETH Zurich
Konrad Polthier  FreieUniversität Berlin
Enrico Puppo  DISI - University of Genova
Hong Qin  Stony Brook University
AllaSheffer  University of British Columbia
Claudio Silva  NYU-Poly
MichelaSpagnuolo  IMATI-CNR
Hiromasa Suzuki  University of Tokyo
Chiew-Lan Tai  Hong Kong University of Science and Technology
Yiying Tong  Michigan State University
TamasVarady  University of Technology and Economics
Libor Vasa  University of West Bohemia
Amir Vaxman  Vienna University of Technology
Luiz Velho  IMPA
Johannes Wallner  TU Graz
Charlie Wang  Chinese University of Hong Kong
<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jun Wang</td>
<td>Nanjing University of Aeronautics and Astronautics</td>
</tr>
<tr>
<td>Tien-Tsin Wong</td>
<td>Chinese University of Hong Kong</td>
</tr>
<tr>
<td>Kevin Xu</td>
<td>Shenzhen Institute of Advanced Technology</td>
</tr>
<tr>
<td>Zeyun Yu</td>
<td>University of Wisconsin-Milwaukee</td>
</tr>
<tr>
<td>Yizhou Yu</td>
<td>University of Hong Kong</td>
</tr>
<tr>
<td>Eugene Zhang</td>
<td>Oregon State University</td>
</tr>
<tr>
<td>Hao Zhang</td>
<td>Simon Fraser University</td>
</tr>
</tbody>
</table>
General Information

Conference venue

Lecture Room 2 (LR 2)
Nanyang Executive Centre (NEC)
60 Nanyang View
Singapore 639673
Tel: +65 6790 6699/6697;
Fax: +65 6790 6120; 6794 7860
E-mail: nec-rsvn@ntu.edu.sg;
http://www.ntu.edu.sg/nec/

Floor plan (2nd floor)
Directional map to NEC

Directional Map to NANYANG EXECUTIVE CENTRE
Nanyang Technological University
60 Nanyang View
Singapore 639673
Taxi fare from the airport to Nanyang Executive Centre is $25 to $30 (including an airport surcharge of $3 or $5 depending on whether it is peak period). From 12 midnight to 6am, the taxi fare is 1 ½ times the normal fare.

Directions to the NEC:
- Take the PIE (Pan-Island Express Way) towards Tuas.
- Exit the express way at Pioneer Rd North (exit 38) and turn right into NTU (Nanyang Technological University)
- Turn right into Nanyang Crescent
- Take the first left into the university apartment blocks.
- Nanyang Executive Centre is the white building at the end of the road.

Travel time from Airport to NTU: about 45 min.

Taxi fare from downtown to campus: $15 to $20
All taxis are metered.
Phone no. to call a taxi: 6552-1111 (there is a $3.20 fee for phone booking).

Travel

Getting to NTU

By bus

Service 179 & 199
SBS Transit Ltd, a public bus company, provides two services, 179 and 199, between Boon Lay Bus Interchange (next to Boon Lay MRT Station) and the University. The services ply from 0600-2400 hrs on weekdays and Saturdays, and from 0630-0020hrs on Sundays and Public Holidays.

Service 179A
179A provides seasonal weekday short trips supplementing Service 179.

Campus Rider
Campus Rider is a free shuttle bus service to and from Pioneer MRT station.

To plan your journey to NTU, use SBS Transit's Journey Planner.

For arrival schedules on your mobile device use iris NextBus. Bus Arrival Information is also available by SMS from the LTA's (Land Transport Authority) Real-Time SMS Bus Arrival Information Service.

By train & bus
The nearest train stations to NTU are Boon Lay (EW27) and Pioneer (EW28) on the East West Line operated by SMRT Corporation.

From Boon Lay station, make your way to the adjacent bus interchange. Services 179 & 199 will take you in to NTU.

From Pioneer station, hop on the Campus Rider which stops in front of Blk 649A.

If you are coming from Changi Airport and are travelling light, you can get on at Changi Airport (CG2), transfer at Tanah Merah (EW4) and take the train all the way to Boon Lay or Pioneer station. The journey takes just over an hour.
By taxi

There are eight taxi companies operating in Singapore. Comprehensive information on Singapore taxis is available at http://www.taxisingapore.com

If you need a taxi to pick you up from NTU, look around for a Fastcall sign and SMS the Fastcall Pin Code to 71222 (Fastcall is operated by Comfort Transportation Pte Ltd and CityCab Pte Ltd).

By car

The university is flanked by the PIE to the south and JalanBahar to the east. There are two entrances, the JalanBahar entrance and the Pioneer North entrance. If you’re coming via the PIE, you want Exits 36 or 38 respectively.

http://www.streetdirectory.com is an online map of Singapore roads.

Locate your desired destination within NTU using our interactive campus map. Entering 'car park' into the search box will reveal the location of car parks on campus.
Getting around NTU

By shuttle bus

Three Shuttle Bus Routes serve the campus. **Campus Loop - Blue (CL-B)** & **Campus Loop - Red (CL-R)** circle the campus with **Campus Rider (CR)** venturing off-campus to and from Pioneer MRT station. On weekends and holidays, Campus Rider becomes **Campus Weekend Rider** with an extended route.

### Campus Loop - Blue (CL-B)

- NIE, Opp. LWN Library
- Opp. Hall 3 & 16
- Opp. Hall 14 & 15
- Opp. Hall 10 & 11
- Nanyang Heights, Opp. Hall 8
- Hall 6, Opp. Hall 2
- Opp. Hall 4
- Opp. Innovation Centre
- Opp. SPMS
- Opp. WKWSCI*
- Opp. CEE*

* Temporary Bus Stops from 15 Feb 14
Campus Loop - Red (CL-R)

- LWN Library, Opp. NIE
- SBS
- WKWSCl
- Hall 7
- Innovation Centre
- Hall 4
- Hall 1 (Blk 18)
- Canteen 2
- Hall 8 & 9
- Grad Hall 1 & 2
- Hall 12 & 13

### Term Time

<table>
<thead>
<tr>
<th>Mon - Fri</th>
<th>Op hours(hrs)</th>
<th>Freq(mins)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0800-1030</td>
<td>5-6</td>
<td></td>
</tr>
<tr>
<td>1030-1200</td>
<td>10-13</td>
<td></td>
</tr>
<tr>
<td>1200-1300</td>
<td>5-6</td>
<td></td>
</tr>
<tr>
<td>1300-2100</td>
<td>10-13</td>
<td></td>
</tr>
<tr>
<td>2100-2300</td>
<td>18-20</td>
<td></td>
</tr>
</tbody>
</table>

### Vacation

<table>
<thead>
<tr>
<th>Mon - Fri</th>
<th>Op hours(hrs)</th>
<th>Freq(mins)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0800-1030</td>
<td>8-10</td>
<td></td>
</tr>
<tr>
<td>1030-2100</td>
<td>15-18</td>
<td></td>
</tr>
<tr>
<td>2100-2300</td>
<td>18-20</td>
<td></td>
</tr>
</tbody>
</table>

### Sat, Sun & Pub Holidays

<table>
<thead>
<tr>
<th>Op hours(hrs)</th>
<th>Freq(mins)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0800-2300</td>
<td>20-25</td>
</tr>
</tbody>
</table>

NEC
**Campus Rider (CR)**

**Mon - Fri**
- Pioneer MRT Stations at Blk 649A
- Hall 1 (Blk 18)
- Canteen 2
- Student Services Centre
- TCT LT, Opp. Admin Bldg
- Opp. Canteen 2
- Pioneer MRT Stations at Blk 649A

**Term Time**
- Mon - Fri
  - 0730-1030
  - 1030-1700
  - 1700-1900
  - 1900-2300
- Freq(mins)
  - 5-7
  - 10-15
  - 5-7
  - 10-15

**Vacation**
- Mon - Fri
  - 0730-2300
  - 0730-1030
- Freq(mins)
  - 15-20
  - 15-20

- Sat, Sun & Pub Holidays
  - 1030-1900
  - 1900-2030
  - 2030-2300
- Freq(mins)
  - 20-25
  - 15-20
  - 20-25
Campus Weekend Rider (CWR)

Sat, Sun & Pub Holidays
- Pioneer MRT Stations at Blk 649A
- Hall 1 (Blk 18)
- Canteen 2
- Student Services Centre
- TCT LT, Opp. Admin Bldg
- ADM, Opp. Hall 8 *
- LWN Library, Opp. NIE
- CEE (N2)
- SBS
- WKWSCI
- Hall 7
- Innovation Centre
- Hall 4
- Hall 5
- Pioneer MRT Station at Blk 649A
Meals

You can choose to have lunch at the Fusion Spoon near Nanyang Executive centre or at canteens in the campus.

From NEC to Fusion Spoon.

From NEC to canteen 2.
Conference banquet is arranged at the **Town Restaurant at Fullerton Hotel.**

**Address:** 1 Fullerton Square, Singapore 049178  
**Tel:** +65 6733 8388

Buses have been arranged to pick you up from NEC at 5:45pm to Fullerton Hotel Singapore. The return buses have also been arranged to pick you up from Fullerton Hotel Singapore at 9:45pm.

**Internet access**

This network account issued to you is valid for the period of your stay in NEC and is required if you will be accessing the PCs in the internet room or the wireless LAN. You can find the username and password in your bag. Please note that the password is case sensitive and the Domain is ASSOC.