

<b>Day 1: Wednesday, Nov 4, 2009</b>	
7:00 – 8:00	Breakfast and Registration
8:00 – 8:10	Welcome
8:10 – 9:25	Paper Session 1
	Title: Road Networks
	<b>From GPS Traces to a Routable Road Map</b> Lili Cao (University of California at Santa Barbara, USA), John Krumm (Microsoft Research, USA)
	<b>Augmenting Cartographic Resources for Autonomous Driving</b> Young-Woo Seo (Carnegie Mellon University, USA), Chris Urmson (Google, USA), David Wettergreen (Carnegie Mellon University, USA) Jin-Woo Lee (General Motors, USA)
	<b>Going Off-road: Transversal Complexity in Road Networks</b> David Eppstein (University of California at Irvine, USA), Michael Goodrich (University of California at Irvine, USA), Lowell Trott (University of California at Irvine, USA)
9:25-10:25	Invited Lecture Speaker: Pat Hanrahan, Stanford University
10:25-10:50	Coffee Break
10:50-12:30	Paper Session 2
	Title: Social GIS
	<b>A Case Study of Using Geographic Cues to Predict Query News Intent</b> Ahmed Hassan (University of Michigan at Ann Arbor, USA), Rosie Jones (Yahoo! Labs, USA), Fernando Diaz (Yahoo! Labs, USA)
	<b>TwitterStand: News in Twitter</b> Jagan Sankaranarayanan (University of Maryland at College Park, USA), Hanan Samet (University of Maryland at College Park, USA), Benjamin Teitler (University of Maryland at College Park, USA), Michael Lieberman (University of Maryland at College Park, USA), Jon Sperling (Department of Housing and Urban Development, Office of Policy Development and Research, USA)
	<b>Towards the SocioScope: an Information System for the Study of Social Dynamics through Digital Traces</b> Andrea Vaccari (MIT, USA), Francesco Calabrese (MIT, USA), Bing Liu (University of Illinois at Chicago, USA), Carlo Ratti (MIT, USA)
	<b>Efficient Viewpoint Assignment for Urban Texture Documentation</b> Houtan Shirani-Mehr (University of Southern California, USA), Farnoush Banaei-Kashani (University of Southern California, USA), Cyrus Shahabi (University of Southern California, USA)
12:30-14:00	Lunch (On your own)
14:00-15:30	Fast Forward Preview Session Session Chair: Jagan Sankaranarayanan (University of Maryland at College Park, USA)
15:30-16:00	Coffee Break
16:00-18:05	Paper Session 3

	Title: GeoWeb
	<p><b>Manipulation of Spatial Weights Using Web Services</b> Sergio Rey (Arizona State University, USA), Luc Anselin (Arizona State University, USA), Myunghwa Hwang (Arizona State University, USA)</p>
	<p><b>Annotating Geospatial Data Based on its Semantics</b> Carla Macário (IC-UNICAMP, Brazil), Sidney Sousa (IC-UNICAMP, Brazil), Claudia Bauzer Medeiros (IC-UNICAMP, Brazil)</p>
	<p><b>An Agenda for the Next Generation Gazetteer: Geographic Information Contribution &amp; Retrieval</b> Carsten Keßler (University of Münster, Germany), Krzysztof Janowicz (University of Münster, Germany), Mohamed Bishr (University of Münster, Germany)</p>
	<p><b>Focus+Glue+Context: An Improved Fisheye Approach for Web Map Services</b> Daisuke Yamamoto (Nagoya Institute of Technology, Japan), Shotaro Ozeki (Nagoya Institute of Technology, Japan), Naohisa Takahashi (Nagoya Institute of Technology, Japan)</p>
	<p><b>The Global Network of Outdoor Webcams: Properties and Applications</b> Nathan Jacobs (Washington University in St. Louis, USA), Walker Burgin (Washington University in St. Louis, USA), Nick Fridrich (Washington University in St. Louis, USA), Austin Abrams (Washington University in St. Louis, USA), Kylia Miskell (Washington University in St. Louis, USA), Bobby Braswell (University of New Hampshire, USA), Andrew Richardson (University of New Hampshire, USA), Robert Pless (Washington University in St. Louis, USA)</p>
18:30-19:15	ACM SIGSPATIAL Business Meeting (Open, Everyone Welcome)
19:30-23:00	Poster Reception, Demo Session, Ph.D. Showcase
<b>Day 2: Thursday, Nov 5, 2009</b>	
7:00 – 8:00	Breakfast and Registration
8:00 – 9:15	Paper Session 4
	Title: Visualization
	<p><b>Improved Visibility Computation on Massive Grid Terrains</b> Jeremy Fishman (Bowdoin College, USA) Herman Haverkort (Eindhoven University of Technology, The Netherlands), Laura Toma (Bowdoin College, USA)</p>
	<p><b>Tree detection from aerial imagery</b> Lin Yang (Univ of Alabama at Birmingham, USA), Xiaqing Wu (Google, USA), Emil Praun (Google, USA), Xiaoxu Ma (Google, USA)</p>
	<p><b>Classification of Raster Maps for Automatic Feature Extraction</b> Yao-Yi Chiang (University of Southern California, USA), Craig Knoblock (University of Southern California, USA)</p>
9:15-10:15	Invited Lecture Speaker: Gur Kimchi, Microsoft Virtual Earth
10:15-10:40	Coffee Break
10:40-12:45	Paper Session 5

	Title: Modeling
	<p><b>Data Structures and Implementation Algorithms for 3D Spatial Data Types</b> Tao Chen (University of Florida, USA) Markus Schneider (University of Florida, USA)</p>
	<p><b>Topological Relations from Metric Refinements</b> Max Egenhofer (University of Maine, USA), Matthew Dube (University of Maine)</p>
	<p><b>A Multidimensional Model Representing Continuous Fields in Spatial Data Warehouses</b> Alejandro Vaisman (Universidad de Buenos Aires, Brazil), Esteban Zimanyi (Universite Libre de Bruxelles, Belgium)</p>
	<p><b>Contextual Encoding of Geospatial Data</b> Pragyana Mishra (Microsoft Corporation, USA), Nagendra Kolluru (Microsoft Corporation, USA)</p>
	<p><b>Morphology Analysis of 3D Scalar Fields Based on Morse Theory and Discrete Distortion</b> Mohammed Mesmoudi (University of Genova, Italy), Leila De Floriani (University of Genova, Italy), Paola Magillo (University of Genova, Italy)</p>
12:45-14:00	Lunch (On your own)
14:00-16:05	Paper Session 6
	Title: Spatial Query Processing
	<p><b>Constrained Reverse Nearest Neighbor Queries on Moving Objects</b> Tobias Emrich (Ludwig-Maximilians University Munich, Germany), Hans-Peter Kriegel (Ludwig-Maximilians University Munich, Germany), Peer Kröger (Ludwig-Maximilians University Munich, Germany), Matthias Renz (Ludwig-Maximilians University Munich, Germany), Andreas Züfle (Ludwig-Maximilians University Munich, Germany)</p>
	<p><b>In-network Query Processing in Mobile P2P Databases</b> Bo Xu (University of Illinois at Chicago, USA), Fatemeh Vafae (University of Illinois at Chicago, USA), Ouri Wolfson (University of Illinois at Chicago, USA)</p>
	<p><b>Monitoring Minimum Cost Paths in Dynamic Road Networks</b> Yuan Tian (Pennsylvania State University, USA), Ken C.K. Lee (Pennsylvania State University, USA), Wang-Chien Lee (Pennsylvania State University, USA)</p>
	<p><b>Reducing the memory required to find a geodesic shortest path on a large mesh</b> Vishal Verma (University of North Carolina at Chapel Hill, USA), Jack Snoeyink (University of North Carolina at Chapel Hill, USA)</p>
	<p><b>Trees or Grids? Indexing Moving Objects in Main Memory</b> Darius Šidlauskas (Aalborg University, Denmark), Simonas Šaltenis (Aalborg University, Denmark), Christian Winther Christiansen (Aalborg University, Denmark), Jan Maffert Johansen (Aalborg University, Denmark), Donatas Šaulys (Aalborg University, Denmark)</p>

16:05-16:30	Coffee Break
16:30-18:10	Paper Session 7
	Title: GIS Privacy
	<b>Preventing Velocity-based Linkage Attacks in Location-Aware Applications</b> Gabriel Ghinita (Purdue University, USA), Maria Luisa Damiani (University of Milan, Italy), Claudio Silvestri (University of Venezia, Italy), Elisa Bertino (Purdue University, USA)
	<b>Distortion-based Anonymity for Continuous Query in Location-Based Mobile Services</b> Xiao Pan (Renmin University, China), Xiaofeng Meng (Renmin University, China), Jianliang Xu (Hong Kong Baptist University, Hong Kong)
	<b>Design and Evaluation of Trajectory Join Algorithms</b> Yun Chen (University of Michigan, USA), Jignesh Patel (University of Wisconsin at Madison, USA)
	<b>Assessing The Trustworthiness of Location Data Based on Provenance</b> Chenyun Dai (Purdue University, USA), Hyo-Sang Lim (Purdue University, USA), Elisa Bertino (Purdue University, USA), Yang-Sae Moon (Kangwon National University, South Korea)
18:30-19:30	Sponsor Demo Session
19:30-23:30	Banquet
<b>Day 3: Friday, Nov 6, 2009</b>	
7:00 – 8:00	Breakfast and Registration
8:00-10:05	Paper Session 8
	Title: Data Mining
	<b>On-Line Discovery of Flock Patterns in Spatio-Temporal Data</b> Marcos Vieira (University of California at Riverside, USA), Petko Bakalo (ESRI, USA), Vassilis Tsotras (University of California at Riverside, USA)
	<b>Finding Long and Similar Parts of Trajectories</b> Kevin Buchin (TU Eindhoven, The Netherlands), Maïke Buchin (Utrecht University, The Netherlands), Marc Van Kreveld (Utrecht University, The Netherlands), Jun Luo (Shenzhen Institute of Advanced Technology, China)
	<b>A Hybrid Evolutionary-Graph Approach for Finding Functional Network Paths</b> Steven Prager (University of Wyoming, USA), William Spears (Swarbotics, LLC, USA)
	<b>Efficiently Managing Large-Scale Raster Species Distribution Data in PostgreSQL</b> Jianting Zhang (City College of New York, USA), Michael Gertz (University of Heidelberg, Germany), Le Gruenwald (University of Oklahoma, USA)
	<b>REG2: A Regional Regression Framework for Geo-Referenced</b>

	<b>Datasets</b> Oner Celepcikay (University of Houston, USA), Christoph Eick (University of Houston, USA)
10:05-10:35	Coffee Break
10:35-12:40	Paper Session 9 Title: Traffic on Road Networks
	<b>Hidden Markov Map Matching Through Noise and Gaps</b> Paul Newson (Microsoft Research, USA), John Krumm (Microsoft Research, USA)
	<b>Vehicle Localization by Matching Triangulated Point Patterns</b> Jan-Henrik Haurert (Leibniz Universität Hannover, Germany), Claus Brenner (Leibniz Universität Hannover, Germany)
	<b>Map-Matching for Low-Sampling-Rate GPS Trajectories</b> Yin Lou (Microsoft Research Asia, China), Chengyang Zhang (University of North Texas, USA), Yu Zheng (Microsoft Research Asia, China), Xing Xie (Microsoft Research Asia, China), Wei Wang (Fudan University, China), Yan Huang (University of North Texas, USA)
	<b>Robust Traffic Merging Strategies for Sensor-Enabled Cars Using Time Geography</b> Ziyuan Wang (University of Melbourne, Australia), Lars Kulik (University of Melbourne, Australia), Kotagiri Ramamohanarao (University of Melbourne, Australia)
	<b>Dynamic network data exploration through semi-supervised functional embedding</b> Alexei Pozdnoukhov (National Centre for Geocomputation, Ireland)
12:40-13:00	Closing Remarks and Adjournment of Conference

Poster Papers Program Schedule	
Fast Forward Preview Session: 14:00-15:30, Wednesday, Nov 4, 2009	
Poster Session: 19:30-23:00, Wednesday, Nov 4, 2009	
<b>A Comparison of Abstract Data Type and Constraint Database Approaches to GIS Query Languages</b> Peter Revesz (University of Nebraska at Lincoln, USA)	
<b>A Dissimilarity Function for Clustering Geospatial Polygons</b> Deepti Joshi (University of Nebraska at Lincoln, USA), Leen-Kiat Soh (University of Nebraska at Lincoln, USA), Ashok Samal (University of Nebraska at Lincoln, USA)	
<b>A New Perspective on Efficient and Dependable Vehicle Routing</b> Dieter Pfoser (IMIS-R.C. Athena, Greece), Alexandros Efentakis (RA CTI), Agnes Voisard (Fraunhofer ISST and FU Berlin, Germany), Carola Wenk (University of Texas at San Antonio, USA)	

**A Parallel Plane Sweep Algorithm for Multi-Core Systems**

Mark McKenney (Texas State University, USA), Tynan McGuire (Texas State University, USA)

**A salience-based approach for the modeling of landscape descriptions**

Jean-Marie Le Yaouanc (IRENav, France), Eric Saux (Naval Academy Research Institute, France), Christophe Claramunt (Naval Academy Research Institute, France)

**A Visual Analysis of Spatio-temporal Data Associated with Human Movement**

Beomjin Kim (Indiana University-Purdue University at Fort Wayne, USA), Benjamin Aeschliman (Indiana University-Purdue University at Fort Wayne, USA), Michael Burton (Indiana University-Purdue University at Fort Wayne, USA)

**An Interactive Approach to Route Search**

Yaron Kanza (Technion-Israel Institute of Technology, Israel), Roy Levin (Technion-Israel Institute of Technology, Israel), Eliyahu Safra (ESRI, USA), Yehoshua Sagiv (The Hebrew University of Jerusalem, Israel)

**Analysis of Wireless Localization using Non-Line-of-Sight Radio Signals**

Dawei Liu (CUHK, Hong Kong)

**Assessing the Predictability of Scheduled-Vehicle Travel Times**

Dalia Tiesyte (Aalborg University, Denmark), Christian Jensen (Aalborg University, Denmark)

**Custom Local Search**

Naren Datha (Microsoft Corporation, USA), Tanuja Joshi (Independent Consultant), Joseph Joy (Microsoft Corporation, USA), Vibhuti Sengar (Microsoft Corporation, USA)

**Cyclone Tracking using Multiple Satellite Image Sources**

Anand Panangadan (NASA Jet Propulsion Laboratory, USA), Shen-Shyang Ho (NASA Jet Propulsion Laboratory, USA), Ashit Talukder (NASA Jet Propulsion Laboratory, USA)

**Decentralized area computation for spatial regions**

Muhammad Jafar Sadeq (University of Melbourne, Australia), Matt Duckham (University of Melbourne, Australia)

**Early Warning Systems in Practice: Performance of the SAFE System in the Field**

Michael Klafft (Fraunhofer ISST, Germany), Agnes Voisard (Fraunhofer ISST and FU Berlin, Germany), Ulrich Meissen (Fraunhofer ISST, Germany), Tobias Krüntzer (Fraunhofer ISST, Germany)

**Efficient and Secure Distribution of Massive Geo-Spatial Data**

Hao Yuan (Purdue University, USA), Mikhail Atallah (Purdue University, USA)

**Finding Skyline Paths in Road Networks**

Yuan Tian (Pennsylvania State University, USA), Ken. C. K. Lee (Pennsylvania State University, USA), Wang-Chien Lee (Pennsylvania State University, USA)

**From the Conceptual Design of Spatial Constraints to their Implementation in Real Systems**

Sara Migliorini (Università di Verona, Italy), Giuseppe Pelagatti (Politecnico di Milano, Italy), Mauro Negri (Politecnico di Milano, Italy), Alberto Belussi (Università di Verona, Italy)

**Geographic Information Retrieval to Suit Immediate Surroundings**

Hiroyuki Toda (NTT, Japan), Norihito Yasuda (NTT, Japan), Yumiko Matsuura (NTT, Japan), Ryoji Kataoka (NTT, Japan)

**Geographically-Typed Semantic Schema Matching**

Jeffrey Partyka (University of Texas at Dallas, USA), Latifur Khan (University of Texas at Dallas, USA), Bhavani Thuraisingham (University of Texas at Dallas, USA),

**Integrating particle tracking models into a GIS for analysis and display of environmental phenomena**

Tiffany Vance (NOAA, USA), Sharon Mesick (NOAA/NCDDC, USA), Scott Cross (NOAA/NESDIS/NCDDC, USA)

**LBS (k,t)-Anonymity: A Spatio-Temporal Approach to Anonymity for Location-Based Service Users**

Amirreza Masoumzadeh (University of Pittsburgh, USA), James Joshi (University of Pittsburgh, USA), Hassan Karimi (University of Pittsburgh, USA)

**Map Matching and Uncertainty: an Algorithm and Real-World Experiments**

Bart Moelans (Hasselt University & Transnational University of Limburg, Belgium), Kristof Ghys (Hasselt University & Transnational University of Limburg, Belgium), Bart Kuijpers (Hasselt University & Transnational University of Limburg, Belgium), Walied Othman (Hasselt University & Transnational University of Limburg, Belgium), Alejandro Vaisman (University of Buenos Aires, Argentina), Dries Vangoidsenhoven (Hasselt University & Transnational University of Limburg, Belgium)

**Mining Correlation between Locations Using Human Location History**

Yu Zheng (Microsoft Research Asia, China), Xing Xie (Microsoft Research Asia, China)

**Multi-dimensional Phenomenon-aware Stream Query Processing**

Ashish Bindra (University of Washington at Tacoma, USA), Ankur Teredesai (University of Washington at Tacoma, USA), Mohamed Ali (Microsoft Corporation, USA), Walid Aref (Purdue University, USA)

**Multimedia Traffic Information in Vehicular Networks**

Ouri Wolfson (University of Illinois at Chicago, USA), Bo Xu (University of Illinois at Chicago, USA), Hyung-Ju Cho (University of Illinois at Chicago, USA)

**Multi-Type Nearest Neighbor Queries On Spatial-Temporal Road Networks With Time Window Constraints**

Xiaobin Ma (Teradata Corporation, USA), Shashi Shekhar (University of Minnesota, USA), Hui Xiong (Rutgers University, USA)

**Next Generation Map Making: Geo-Referenced Ground-Level LIDAR Point Clouds for Automatic Retro-Reflective Road Feature Extraction**

Xin Chen (NAVTEQ Corporation), Matei Stroila (NAVTEQ Corporation), Ruisheng Wang (NAVTEQ Corporation), Brad Kohlmeyer (NAVTEQ Corporation), Narayanan Alwar (NAVTEQ Corporation), Jeff Bach (NAVTEQ Corporation)

**Opportunistic Sampling in Wireless Sensor Networks**

Muhammad Umer (University of Melbourne, Australia), Egemen Tanin (University of Melbourne, Australia), Lars Kulik (University of Melbourne, Australia)

**Prediction and Simulation In Categorical Fields: A Combining Transition Probabilities Approach**

Guofeng Cao (University of California at Santa Barbara, USA), Phaedon Kyriakidis (University of California at Santa Barbara, USA), Michael Goodchild (University of California at Santa Barbara, USA)

**Quality Assessment of Automatically Generated Feature Maps for Future Driver Assistance Systems**

Sabine Hofmann (IKG, Leibniz Universität Hannover, Germany) Claus Brenner (IKG, Leibniz Universität Hannover, Germany)

**Range Queries for Mobile Objects in Wireless Sensor Networks**

Goce Trajcevski (Northwestern University, USA), Zachary Bischof (Northwestern University, USA), Peter Scheuermann (Northwestern University, USA)

**Sea Floor Bathymetry Trackline Surface Fitting Without Visible Artifacts Using ODETLAP**

Tsz-Yam Lau (Rensselaer Polytechnic Institute, USA), You Li (Rensselaer Polytechnic Institute, USA), Zhongyi Xie (Rensselaer Polytechnic Institute, USA), W Randolph Franklin (Rensselaer Polytechnic Institute, USA)



**Spatial search processing for embedded devices**

Hideki Hayashi (Hitachi, Ltd., Japan), Masaaki Tanizaki (Hitachi, Ltd., Japan), Akiko Sato (Hitachi, Ltd., Japan), Kohji Kimura (Hitachi, Ltd., Japan), Hisanori Kajiyama (Hitachi, Ltd., Japan), Hisanori Kajiyama (Hitachi, Ltd., Japan)

**Spatial sorting function for a map-based slideshow editor**

Hideyuki Fujita (The University of Tokyo, Japan), Masatoshi Arikawa (The University of Tokyo, Japan)

**Spatio-Textual Spreadsheets: Geotagging via Spatial Coherence**

Michael Lieberman (University of Maryland at College Park, USA), Hanan Samet (University of Maryland at College Park, USA), Jagan Sankaranarayanan (University of Maryland at College Park, USA), Jon Sperling (Department of Housing and Urban Development, Office of Policy Development and Research, USA)

**Towards a Probabilistic Time Geography**

Stephan Winter (University of Melbourne, Australia)

**Updating 3D City Models - how to preserve geometric-topological consistency**

Gerhard Groeger (University of Bonn, Germany), Lutz Pluemer (University of Bonn, Germany)

### Ph.D. Showcase Program Schedule

Fast Forward Preview Session: 14:00-15:30, Wednesday, Nov 4, 2009

Ph.D Showcase Session: 19:30-23:00, Wednesday, Nov 4, 2009

#### **Exploring Movement- Similarity Analysis of Moving Objects**

Somayeh Dodge (University of Zürich, Switzerland)

#### **On Continuously Monitoring the Top-k Moving Objects with Relational Group and Score Functions**

Jian Wen (Northeastern University, USA)

#### **Using OpenStreetMap to deliver location-based Environmental Information in Ireland**

Blazej Ciepluch (National University of Ireland at Maynooth, Ireland), Peter Mooney (National University of Ireland at Maynooth, Ireland), Ricky Jacob (National University of Ireland at Maynooth, Ireland), Adam Winstanley (National University of Ireland at Maynooth, Ireland)

### Demonstration Program Schedule

Demonstration Session: 19:30-23:00, Wednesday, Nov 4, 2009

#### **BioMon: A Google Earth Based Continuous Biomass Monitoring System**

Ranga Vatsavai (Oak Ridge National Laboratory, USA)

#### **CGAL - The Computational Geometry Algorithms Library**

Andreas Fabri (GeometryFactory, France), Sylvain Pion (INRIA Sophia Antipolis - Mediterranee, France)

#### **Analysis of community-contributed space- and time-referenced data**

Gennady Andrienko (Fraunhofer IAIS, Germany), Natalia Andrienko (Fraunhofer IAIS, Germany), Peter Bak (University of Konstanz, Germany), Slava Kisilevich (University of Konstanz, Germany), Daniel Keim (University of Konstanz, Germany)

#### **Geographic Analysis & Visualization of Climate Extremes for the Quadrennial Defense Review**

Auroop Ganguly (Oak Ridge National Laboratory, USA), Karsten Steinhaeuser (Oak Ridge National Laboratory, USA), Alexander Sorokine (Oak Ridge National Laboratory, USA), Esther Parish (Oak Ridge National Laboratory, USA), Shih-Chieh Kao (Oak Ridge National Laboratory, USA), Marcia Branstetter (Oak Ridge National Laboratory, USA)

#### **Querying Geospatial Stream in Secondo**

Chengyang Zhang (University of North Texas, USA), Yan Huang (University of North Texas, USA)

**GeoDec : A Multi-Layered Query Processing Framework for Spatio-Temporal Data**

Luciano Nocera (University of Southern California, USA), Arjun Rihan (University of Southern California, USA), Songhua Xing (University of Southern California, USA), Ali Khodaei (University of Southern California, USA), Ali Khoshgozaran (University of Southern California, USA), Farnoush Banaei-Kashani (University of Southern California, USA), Cyrus Shahabi (University of Southern California, USA)

**OpenGeoDa, Open Source Software for the Exploration and Visualization of Geospatial Data**

Luc Anselin (Arizona State University, USA), Mark McCann (Arizona State University, USA)

**PROS: A Peer-to-Peer System for Location Privacy Protection on Road Networks**

Jie Bao (Auburn University, USA), Haiquan Chen (Auburn University, USA), Wei-Shinn Ku (Auburn University, USA)

**Web 2.0 Geospatial Visual Analytics for Improved Urban Flooding Situational Awareness and Assessment**

Yong Liu (NCSA, USA), David Hill (NCSA, USA), Luigi Marini (NCSA, USA), Rob Kooper (NCSA, USA), Alejandro Rodriguez (NCSA, USA), James Myers (NCSA, USA)