IEEE ITS SOCIETY NEWSLETTER

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In This Issue

Society News
- Message from the Editor .......................................................... 2
- Board of Governors Election ...................................................... 3
- New Fellows of the IEEE .............................................................. 3
- Call for Nominations .................................................................. 3

Conferences
- ITS Sponsored Conferences ...................................................... 4
- Intelligent Vehicles Symposium (IV 2009) ................................... 5
- Intelligence and Security Informatics (ISI 2009) ......................... 6
- Service Operations, Logistics and Informatics (SOLI 2009) ........ 7
- Mechatronic and Embedded Systems and Applications (MESA 2009) ... 8
- Vehicular Electronics and Safety (VES 2009) .............................. 9
- Intelligent Transportation Systems Conference (ITSC 2009) ........ 10
- Conference Calendar ................................................................. 10
- 2009 Vehicle Active Safety Symposium (VASS 2009) ................ 13
- Models and Technology for Intelligent Transportation Systems .... 14

Announcements
- Job Posting .............................................................................. 15
- Call for Proposals: IEEE ITSS Best Ph.D. Dissertation Award
  and IEEE ITSS Best Practice Award for Engineers .................... 16
- Call for Papers: ITS Magazine ................................................. 17
- Call for Papers: Special Issue of IEEE Transactions on
  Intelligent Transportation Systems, Exploiting Wireless
  Communication Technologies in Vehicular Transportation Networks ...... 18
- Transactions on ITS Abstracts ................................................. 19
- Officers and Committee Chairs .............................................. 24

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The IEEE ITS Society Newsletter is published quarterly in January, April, July, and October. The current and all past issues of the Newsletter may be downloaded at no charge from the Society’s web site:

www.ieee.org/itss

You may subscribe to or unsubscribe from announcements at the same web site. Announcements are sent to approximately 10,000 ITS professionals from industry, academia, and government.

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Information for Contributors

Announcements, feature articles, book and meetings reviews, opinions, letters to the editor, professional activities, abstracts of reports, and other material of interest to the ITS community are solicited. Please submit electronic material for consideration in any of the following formats: Microsoft Word, OpenOffice, plain ASCII, rich text format (rtf), or portable document format (pdf) to the Editor-in-Chief at c.herget@ieee.org.

SOCIETY NEWS

From the Editor

by Charles Herget

The news is brief this month because, as usual, there was not much activity in the Society around the end of last year. We can announce the winners of the election to the Board of Governors effective January 1 of this year and the names of the members of the Society who were elevated to the grade of Fellow of IEEE, effective January 1 also.

There will be many activities sponsored by the Society this year, and this Newsletter contains announcements of those activities as well as other ITS activities sponsored by other organizations. We include the abstracts of papers included in the December 2008 issue of the Transactions on ITS.
Board of Governors Election

IEEE has announced the winners of the election to the Society’s Board of Governors for a three year term ending December 31, 2011.

The five new members are
Matthew J. Barth
Yaobin Chen
Petros A. Ioannou
Jeffrey Miller
Urbano Nunes

Statements from each of the candidates appeared in the October 2008 issue of this Newsletter.

New Fellows of the IEEE

IEEE has announced the names of members who have been elevated to the grade of Fellow effective January 1, 2009. Two members of our Society were among those who became a Fellow of IEEE. They are

Chai Toh, Nanyang University, Singapore, for contributions to communication protocols in ad hoc mobile wireless networks.

and

Mohan Trivedi, University of California, San Diego, for contributions to intelligent transportation systems.

Call for Nominations

Article V, Section 3 of the Society's Bylaws provides for nomination of candidates for election to the Board of Governors (BOG) by petition of members of the Society. The entire text of the Society’s Bylaws can be found on the web site: www.ieee.org/itss. The relevant section of the Bylaws is included below.

Bylaws, Article V, Section 3:

Call for Nominations - The Chair of the Nominations Committee shall cause a call for nominations of elected members of the BOG to be publicized to the entire Society membership, on or before May 1 of each year. The call must carry with it a statement setting a time limit for the submission of nomination petitions to the Society. A nomination by petition from the Society membership must contain valid signatures of at least twenty five (25) Society members, excluding Students and Affiliates, and must be received by the President of the Society on or before May 15. The reception of any such valid petition shall automatically place that nominee on the slate, provided he/she is an IEEE and Society Member in good standing and meets all other requirements of the Constitution and these Bylaws.
Conferences

ITS Society Sponsored Conferences

The Society sponsors six conferences each year.

The schedule for 2009 and announcements follow.

2009

June 3-5
Intelligent Vehicle Symposium (IV)
Xi’an, Shanxi, China
http://www.ieeeiv.net/

June 8-11
Intelligence and Security Informatics (ISI)
Dallas, Texas USA

July 22-24
Service Operations, Logistics and Informatics (SOLI)
Chicago, Illinois USA
http://liu.ece.uic.edu/SOLI09/

August 30-September 2
Mechatronic and Embedded Systems and Applications (MESA)
San Diego, California USA
http://iel.ucdavis.edu/mesa/MESA09/

September 23-25
Vehicular Electronics and Safety (VES)
Pune, India
http://ewh.ieee.org/r10/bombay/icves/icves09.ppt

October 3-7
Intelligent Transportation Systems Conference (ITSC)
Saint Louis, Missouri USA
http://www.ieee.org/itss
Call for Papers

2009 IEEE Intelligent Vehicles Symposium
Sponsored by the IEEE Intelligent Transportation Systems Society
Hosted by Xian Jiaotong University & Institution Automation, Chinese Academy of Sciences
June 3-5, 2009, Kempinski Hotel Xi’an, Shaanxi, China

THE INTELLIGENT VEHICLES SYMPOSIUM (IV’09) is an annual forum sponsored by the IEEE INTELLIGENT TRANSPORTATION SYSTEMS SOCIETY (ITSS). It gathers researchers from industry and universities to discuss research and applications for Intelligent Vehicles and Intelligent Infrastructures. The technical presentations are characterized by a single session format so that all attendees remain in a single room for multilateral communications in an informal atmosphere, most of the papers will be poster presentations. Papers dealing with all aspects of vehicle-related intelligent systems and cooperation between vehicles and infrastructures are solicited for IV’09.

Program Topics

- Driver Assistance Systems
- Automated Vehicles
- Active and Passive Safety
- Integrated Safety Systems
- Vehicle Environment Perception
- System Architecture
- Smart Infrastructure
- Impact on Traffic Flows
- Cooperative Vehicle-Highway Systems
- Collision Avoidance
- Inter-Vehicle Communications
- Floating Car Data for Safety
- Dedicated Short Range Communications
- IVI
- Sensors
- Image, Radar, Lidar Signal Processing
- Information Fusion
- Vehicle Control
- Telematics
- Decision and Expert Systems
- Communications and Networks
- Human Factors
- Human Machine Interaction
- Others

Important Dates

- Paper submission deadline: Dec. 15, 2008
- Notification of acceptance: Feb. 28, 2009
- Camera-ready manuscript due for proceedings: Mar. 25, 2009
- Workshop proposal deadline: Feb. 1, 2009
- Demo proposal deadline: Mar. 15, 2009

Demonstrations

On June 5, the road right next to the conference venue will be closed for normal traffic in order to provide a perfect site for demonstrations of intelligent vehicles. The demonstration conditions and program will be published on the website.

Further Information

Further information can be found on our website www.ieeeiv.net. If you want to organize a special session, workshop or demonstration you can contact the organization committee at ieeeiv2009@gmail.com or iv09@aiar.xjtlu.edu.cn.

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Conference Scope and Background
Intelligence and Security Informatics (ISI) has been established as an interdisciplinary subject that focuses on the development and use of advanced information technologies, including methodologies, models and algorithms, infrastructure, systems, and tools, for local, national/international, and global security related applications through an integrated technological, organizational, behavioral, and policy based approach. The themes of the 2009 IEEE ISI conference will cover context-aware data analysis, effective counterterrorism, and public education on cybercrime detection. The conference will provide a stimulating forum for ISI researchers all over the world to exchange ideas and report research results.

Paper Submission/Areas of Interest
Submissions may include systems, methodology, testbed, modeling, evaluation, policy, and position papers. Research should be relevant to informatics, organization, and/or public policy in applications of counter-terrorism or protection of local/national/international/global security in the physical world and/or cyberspace. Proposals for tutorials and special-topic workshops in any areas of Intelligence and Security Informatics research and practice are also welcome. The ISI 2009 conference proceedings will be published by the IEEE Press. Topics include but are not limited to:

I. Information Sharing and Data/Text Mining
- Intelligence-related knowledge discovery
- Criminal data mining and network analysis
- Criminal/intelligence info. sharing and visualization
- Web-based intelligence monitoring & event detection
- Deception and intent detection
- Cybercrime detection and digital forensics
- Spatio-temporal data analysis/GIS for crime analysis and security informatics
- Image and video analysis for intention detection
- Authorship analysis and identification
- Applications of digital library technologies in intelligence data processing, preservation, sharing, and analysis
- Agents and collaborative systems for intelligence sharing
- HCI and user interfaces of relevance to ISI
- Information sharing policy and governance
- Privacy, security, and civil liberties issues
- Computerized community security and surveillance systems
- Context-aware data analysis

II. Infrastructure Protection and Emergency Responses
- Cyberinfrastructure design and protection
- Intrusion detection
- Bio-terrorism tracking, alerting, and analysis
- Bioterrorism information infrastructure
- Transportation and communication infrastructure protection
- Border/transportation safety
- Emergency response and management
- Disaster prevention, detection, and management
- Communication and decision support for search and rescue
- Decision support systems for real-time/near real-time security-related events
- Assisting citizen response to terrorism and catastrophic events
- Computer forensics and crime lead discovery
- Cryptography & anti-fraud IT
- Immigration and security

III. Terrorism Informatics
- Terrorism related analytical methodologies and software tools
- Terrorism knowledge portals and databases
- Terrorist incident chronology databases
- Terrorism root cause analysis
- Social network analysis (radicalization, recruitment, conducting operations), visualization, and simulation
- Forecasting terrorism
- Countering terrorism
- Measuring the impact of terrorism on society
- Measuring the effectiveness of counter-terrorism campaigns
- Crime intelligence and cyberspace crime investigation

Organizing Committee
Bhavani Thuraisingham, Univ. of Texas at Dallas, Conference Co-Chair
Hsinchun Chen, Univ. of Arizona, Conference Co-Chair
Latifur R Khan, Univ. of Texas at Dallas, Program Co-Chair
Daniel Zeng, Univ. of Ariz. & Chinese Acad. of Sciences, Program Co-Chair
Lina Zhou, Univ. of Maryland, Baltimore County, Program Co-Chair
Chris Yang, Drexel Univ., Publication Co-Chair
Min-Yuh Day, Natl. Taiwan Univ., Publication Co-Chair
Catherine A. Larson, Univ. of Arizona, Local Arrangements

Important Dates
- Paper submissions due: February 2, 2009
- Notification of acceptance: March 4, 2009
- Tutorial/Workshop proposals: February 20, 2009
- Camera ready copy due: March 13, 2009
- Conference dates: June 8-11, 2009

Hosts
The University of Texas at Dallas
The University of Arizona

Sponsors
IEEE Intelligent Transportation Systems Society
The University of Texas at Dallas
Air Force Office of Scientific Research
Intelligence Advanced Research Projects Agency
Raytheon Corporation
National Science Foundation
The 2009 IEEE International Conference on Service Operations, Logistics and Informatics will be held in Chicago, July 22–24, 2009. This conference will provide a remarkable opportunity for the academic and industrial communities to address new challenges and share solutions, and discuss future research directions. It will feature plenary speeches, industrial panel sessions, lecture sessions, interactive sessions, and invited/special sessions. Papers related to services/logistics design, innovations, marketing, operations, and informatics are strongly encouraged. Technical topics of the conference include but are not limited to:

- Theory in Service Science, Boundaryless, Information Inflation, Mobile & Network Fusion
- Service Design, Engineering, Operations, and Innovations
- Logistics & Supply Chain Management
- Material Flow (MF) Science and Technology
- Service/Event Management & Manufacturing
- Information & Communications Technology and Systems (ICTS)
- Electronic Commerce & Knowledge Management

PAPER SUBMISSION
Manuscripts must be electronically submitted through the conference website http://liu.ece.uic.edu/SOLI09/. Submitted manuscripts should be at most six (6) pages in IEEE two-column format, including figures, tables, and references. Please use the LaTeX style file or Microsoft Word template available from the conference website to prepare your manuscript. All submissions MUST be in PDF format.

IMPORTANT DATES
Special session proposals deadline --------------------- February 1, 2009
Paper submission deadline----------------------------- February 1, 2009
Notification of acceptance---------------------------- April 1, 2009
Camera-ready copy due------------------------------- May 1, 2009

Sponsors: IEEE Intelligent Transportation Systems Society, INFORMS Service Science Section, AIS SIG on E-Business, Chinese Academy of Sciences, University of Illinois at Chicago
CALL FOR PAPERS

MESA09 – 2009 ASME/IEEE International Conference on Mechatronic and Embedded Systems and Applications
August 30 – September 2, 2009, San Diego Convention Center

Advisory Committee
Jorge Angeles, McGill University
David M. Auslander, Univ. of California, Berkeley
Kevin C. Craig, Rensselaer Polytechnic Institute
Krishna C. Gupta, Univ. of Illinois at Chicago
C. S. George Lee, Purdue University
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Harry H. Cheng, Univ. of California, Davis, USA

Program Chair
YangQuan Chen, Utah State University, Logan, USA

Chair of the Honors and Awards Committee
Zuomin Dong, University of Victoria, Canada

Executive Secretariat Contact E-Mail:
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Symposia and Symposium Chairs

Automation and Robotics in Environmental and Agricultural Applications
Uriel A. Rosa, Univ. of California, Davis, USA

Autonomous Systems and Ambient Intelligence
Hyo-Sung Ahn, Gwangju Institute of Science & Tech., Korea

Bio-Mechatronics and Bio-sensors
Lei Zuo, SUNY Stonybrook, USA
Shane Xie, the University of Auckland, New Zealand

Cyber-Physical Systems
YangQuan Chen, Utah State Univ., USA
Xiaoqi Chen, University of Canterbury, New Zealand

Embedded Soft Computing
Riccardo Caponetto, University of Catania, Italy

Embedded System Infrastructure and Theory
Martin Horauer, UAS Technikum Wien, Austria

Learning Control and Diagnosis in Mechatronic Systems
Wen Chen, Wayne State University, USA

Mechatronics Control and Electrical Vehicles
Chengbin Ma, UM-SJTU Joint Institute, Shanghai Jiaotong Univ.

Mechatronic and Embedded System Applications
Primo Zingaretti, Politecnico University of Marche, Ancona, Italy

Sensor Networks
Bo Chen, Michigan Technological University, USA

Small Unmanned Aerial Vehicle Technologies & Applications
YangQuan Chen, Utah State University, USA
Holger Voos, Hochschule Ravensburg-Weingarten, Germany

International Program Committee:
http://www.asmeconferences.org/IDETC09/

Technical Co-Sponsors
ASME Division of Design Engineering
IEEE Intelligent Transportation Systems Society
IEEE Control Systems Society

Objectives
Mechanical and electrical systems show an increasing integration of mechanics with electronics and information processing. This integration is between the components (hardware) and the information-driven functions (software), resulting in integrated systems called mechatronic systems. The development of mechatronic systems involves finding an optimal balance between the basic mechanical structure, sensor and actuators, automatic digital information processing and control in which embedded systems play a key role. The field of embedded system and mechatronics is becoming evermore challenging; issues in embedded software lie at the focus of researchers both in industry and academia. The goal of this 5th ASME/IEEE MESA, MESA09, is to bring together experts from the fields of mechatronic and embedded systems, disseminate the recent advances made in the area, discuss future research directions, and exchange application experience. The conference program is organized in a number of symposia.

Paper Submission
Complete manuscripts in PDF format must be electronically submitted to the conference website:
http://www.asmeconferences.org/IDETC09/

Venue
MESA09 will be held within the 2009 ASME International Design Engineering Technical Conferences (IDETC).

Important Dates
February 06, 2009: Abstract, Proposal for Special Session
February 13, 2009: Full paper due
April 24, 2009: Author Notification of Acceptance
April 24, 2009: Submission of 1903 Form (Copyright)
May 15, 2009: Submission of Final Paper
August 30, 2009: First day of conference
September 2, 2009: Last day of conference

Companion Web Site
http://iel.ucdavis.edu/mesa/MESA09/
The IEEE Intelligent Transportation Systems Society (ITSS) is sponsoring its 12th international conference on basic research and applications of leading advances in communications, computer, control, and electronics technologies related to Intelligent Transportation Systems (ITS).

**CALL FOR PAPERS**

**Program Topics**

**Travel and Traffic Management**
- Travel Information and Guidance
- Ride Matching And Reservation
- Traveler Services Information
- Traffic Control
- Incident Management
- Travel Demand Management
- Emissions Testing And Mitigation
- Highway-rail Intersection
- Complex Adaptive Systems for ITS

**Public Transportation Management**
- Public Transportation Management
- En-route Transit Information
- Personalized Public Transit
- Public Travel Security

**Commercial Vehicle Operations**
- Commercial Vehicle Electronic Clearance
- Automated Roadside Safety Inspection
- On-board Safety Monitoring
- Commercial Vehicle Administrative Processes
- Hazardous Material Incident Response
- Commercial Fleet Management

**Advanced Vehicle Safety Systems**
- Collision Avoidance
- Vision Enhancement
- Advanced Safety Systems
- Automated Vehicle Operation

**Electronic Payment**
- Electronic Payment Services

**Infrastructure Management**
- Health Monitoring of Bridges, Road, etc.
- Smart or Intelligent Sensor Systems

**ITS Modeling and Analysis**
- Data Mining and Analysis
- Travel Behavior under ITS
- Simulation and Modeling
- Traffic Theory for ITS
- Statistical Modeling
- Optimization and Control: Theory and Modeling
- Geographic Information Systems
- Hardware in the Loop Simulation
- Software in the Loop Simulation
- Artificial Transportation Systems

**Emergency Management and Transportation Security**
- Emergency Notification & Personal Security
- Emergency Vehicle Management
- ITS and National Security
- Parallel Management Systems for Transportation Emergency

**Other Topics**
- Imaging and Image Analysis
- Multi-Sensor Fusion
- Cooperative Systems
- Intelligent Transportation Space
- Agent-based Methods for Traffic and Vehicular Systems
- Ad Hoc Systems

**Paper Submission**

Complete manuscripts in PDF format must be electronically submitted for peer-review in IEEE standard-format. Detailed submission instructions can be found on the paper submission website: conference site pending (see www.ewh.ieee.org/tc/its/)

**Submission Deadline:** May 1, 2009
**Notification of Acceptance Date:** July 15, 2009
**Final Paper Submission Date:** August 15, 2009
Conference Calendar

by Massimo Bertozzi and Paolo Grisleri

This section lists upcoming ITS-related conferences, workshops, or exhibits. Contributions are welcome; please send announcements to itsconfs@ce.unipr.it.

2009

February 4-5
ATEC-ITS France Congress
Paris, France
http://www.atec-tec.net/fr/its_accueil_f7.asp

March 23-26
6th International Symposium on Mechatronics and its Applications (ISMA09)
Sharjah, United Arab Emirates (UAE)
http://www.isma-conf.org/
March 24-25
6th International Workshop on Intelligent Transportation (WIT2009)
Hamburg, Germany
http://wit.tu-harburg.de

April 26-29
IEEE 69th Vehicular Technology Conference (VTC2009-Spring)
Barcelona, Spain
http://www.ieeevtc.org/vtc2009spring/

May 11-13
IEEE International Conference on Virtual Environments, Human Computer Interfaces and Measurement System (VECIMS2009)
Hong Kong, China
http://vecims.ieee-ims.org

May 13-17
2009 IEEE International Conference on Robotics and Automation
Kobe, Japan
http://www.icra2009.org

May 18-19
2009 Vehicle Active Safety Symposium (VASS 2009)
Indianapolis, IN, U.S.A.
http://www.engr.iupui.edu/tasi/VASS09/index.php

May 26-29
International Transport Forum on Transport and Globalisation
Leipzig, Germany
http://www.internationaltransportforum.org

June 1-3
Intelligent Transportation Society America's 2009 Annual Meeting & Exposition
National Harbor, MD, U.S.A.
http://www.itsa.org/annualmeeting/c396/
ITSA_Events/2009_Annual_Meeting_and_Exposition.html

June 22-23
International Conference on Models and Technology for Intelligent Transportation Systems
Rome, Italy

July 8-10
3rd IEEE Multi-conference on Systems and Control (MSC2009)
Saint Petersburg, Russia
http://conf.physcon.ru/msc09/index.html
July 13-15
IASTED Control and Applications
Cambridge, United Kingdom
Submission due by: March 9
http://www.iasted.org/conferences/home-651.html

July 16-18
International Symposium on Transportation and Traffic Theory
Hong Kong
http://www.isttt18.org

September 21-25
ITS, World Congress
Stockholm, Sweden
http://www.itsworldcongress.com

October 12-15
7th International Conference on Computer Vision System (ICVS2009)
Liege, Belgium
Submission due by: May 4
http://icvs2009.intelsig.be

September 8-11
International Conference on Image Analysis and Processing (ICIAP2009)
Salerno, Italy
http://www.iciap2009.org

September 20-23
IEEE 70th Vehicular Technology Conference (VTC2009-Fall)
Anchorage, AK, U.S.A.
http://www.ieeevtc.org/vtc2009fall/

November 2-4
IASTED Intelligent Systems and Control
Submission due by: June 12
Cambridge, MA, U.S.A.
http://www.iasted.org/conferences/home-665.html

December 16-18
Artificial Intelligence Applications in Intelligent Transportation Systems
4th Indian International Conference on Artificial Intelligence
Tumkur (near Bangalore), India
http://www.iiconference.org/iicai09/its.html
Call for Papers

2009 Vehicle Active Safety Symposium (VASS 2009)

The primary focus of VASS 2009 will be vehicle active safety systems research and development. Vehicle active safety systems incorporate sensors, driver interface and countermeasures (driver alerts, vehicle dynamics, and occupant protection) in order to anticipate crash scenarios and eliminate or mitigate the impact of these crashes. Basic mechanisms related to active safety systems include:

- sleepy/inattentive driving
- impaired drivers (alcohol, drugs, etc.)
- older drivers/teen drivers
- safety benefit assessment and crash analysis
- cognitive analysis
- sensors
- vehicle control algorithms
- communications (vehicle-vehicle, vehicle-infrastructure)

Research and development involving these mechanisms lead to algorithms, working models, and human-machine interfaces which are then analyzed and validated via simulator and on-the-road testing.

This symposium provides an opportunity for researchers and developers in vehicle active safety areas to present the results of their work. The keynote speaker is Dr. Joseph Kanianthra, former Associate Administrator, Vehicle Safety Research, National Highway Traffic Safety Administration (NHTSA).

Papers resulting from hardware and software research and development of active safety concepts, paradigms, and implementations are solicited. While the focus is on science and engineering related work, papers may also be presented in other active safety related areas such as liability and regulatory issues.

Information regarding the conference, hotel, and author submission guidelines can be found at: [http://www.engr.iupui.edu/tasi/VASS09/index.php](http://www.engr.iupui.edu/tasi/VASS09/index.php). Full papers are due by February 16, 2009 for peer review. Authors will be notified of their paper’s acceptance by March 16, 2009. For the paper to appear in the proceedings at least one author must be registered for the conference. A CDROM proceedings will be distributed at the symposium.

Location: Indianapolis, Indiana, USA.
Date: May 18-19, 2009
Hotel: Hampton Inn, 105 S. Meridian St. Indianapolis, Indiana, USA, 46225, 1-317-261-1200

Contact Information:

General Chairperson: Dr. Russ Eberhart reberhar@iupui.edu
Technical Program Chairperson: Dr. Glenn Widmann glenn.r.widmann@delphi.com
In the last decades Intelligent Transportation Systems have been stimulating an intense research activity by the scientific community, which produced a large number of models, methods and experimental applications regarding traveler information, management systems, and vehicle control. Most of such models still remained at a theoretical level because the technology required had not yet reached a sufficient maturity to provide effective and economically efficient applications.

In the last years, technological advances progressed very fast and many products and services are now coming onto the market. Those theoretical models can finally be applied and tested on actual implementations and, on the other hand, the large-scale commercialization of industrial products and services can exploit the results of these studies in order to provide stable and effective impacts on the transportation system.

The International Conference on Models and Technology for Intelligent Transportation Systems aims at providing an opportunity for scholars engaged in basic or industrial research to meet and to discuss requirements for ITS applications, unsolved problems and future developments.

**Topics:**
- Dynamic models for ITS applications
- Traveler Information Systems
- Traffic Management Systems
- Dynamic Railway Operations
- Advanced Public Transport Systems
- Advanced Vehicle Control Systems
- Commercial Vehicle Operations and Dynamic Fleet Management
- Human Behavior
- Diagnostic Systems
- Devices and Sensors for ITS
- Safety Systems
- Security in Transportation Systems
- Standards and Architectures for ITS
- Financial and Economical Issues for ITS Deployment

**Call for papers**
Authors intending to present a paper should submit an abstract of 2-4 pages by 15 March 2009. Full papers of accepted presentations may be submitted after the Conference in order to be included in the book of proceedings. A selection of the highest-quality papers will be considered for publication in a Special Issue of Transportation Research Part C: Emerging Technologies.

**Scientific Committee and invited speakers**
Prof. Alberto Broggi (Università di Parma, Italy), Prof. Giulio Erberto Cantarella (Università di Salerno, Italy), Prof. Michael Florian (Université de Montréal, Canada), Prof. Hani Mahmassani (Northwestern University, USA), Prof. Markos Papageorgiou (Technical University of Crete, Greece).

**Organizing Committee at the Università Sapienza di Roma**
Prof. Gaetano Fusco (chair), Dr. Adriano Alessandrini, Dr. Maurizio Bielli (CNR-IASI), Dr. Chiara Colombaroni, Prof. Guido Gentile, Prof. Riccardo Licciardello, Dr. Lorenzo Meschini, Dr. Marialisa Nigro (Università Roma Tre), Prof. Luca Persia, Prof. Stefano Ricci.

**Conference location**
The Conference will be held at the Faculty of Engineering of the University Sapienza of Roma, which is located in the historic Center of Rome, 200 meters from the Colosseum.

**Conference Fees**
Conference Fees are 400 euro for early registrations (no later than 30 April) and 450 euro for late registrations (later than 30 April).
Conference Fees include: conference attendance, CD and book of proceedings, conference lunches and coffee breaks.
ANNOUNCEMENTS

Job Posting

Georgia Institute of Technology
F. R. Dickerson Chair
in Information Intensive Urban Transportation Systems

The School of Civil and Environmental Engineering invites outstanding applicants to add to our existing strengths in Transportation. Our primary interest is for candidates in the broad areas of intelligent transportation systems with special interest in the application of information and communication technologies to transportation system operations. A joint appointment between civil engineering and computer science, electrical engineering, or industrial and systems engineering is a possibility. The ideal candidate will complement existing strengths and ongoing research of the transportation-related faculty at Georgia Tech, which includes a range of topics from logistics/supply chain modeling to geometric design of highways. This Chair is intended to serve as the foundation for major research and education initiatives in advancing the technological sophistication of urban transportation systems particularly through the application of advanced communications and computing to facilitate congestion reduction and energy efficiency. Preference will be given to those candidates that have demonstrated experience and success with collaborating with firms in the communications and information technologies fields.

Screening of applicants will begin immediately and will continue until the position is filled. Candidates must hold a Doctoral degree. Applicants should submit a cover letter indicating background and experience, a curriculum vitae, a one-page statement of teaching interests, a one-page statement of research interests and objectives, and a list of four references to:

Chair, Dickerson Chair, Transportation Search Committee
School of Civil and Environmental Engineering
Georgia Institute of Technology
790 Atlantic Drive
Atlanta, GA 30332-0355

For more information regarding the school, please visit (http://www.ce.gatech.edu/jobs)

Georgia Institute of Technology is an Equal Opportunity/Affirmative Action Institution.
IEEE ITSS Best Ph.D. Dissertation Award

Purpose and Selection Criteria
The prestigious IEEE ITSS Best Ph.D. Dissertation Award is given annually for the best dissertation in any ITS area that is innovative and relevant to practice. This award is established to encourage doctoral research that combines theory and practice, makes in-depth technical contributions, or is interdisciplinary in nature, having the potential to contribute to the ITSS and broaden the ITS topic areas from either the methodological or application perspectives.

Application material
Each application must consist of the following material:
1. A doctoral dissertation written by the applicant in any language no more than 18 months prior to the submission deadline and not previously submitted.
2. A summary of the dissertation in English of up to 3 pages in length written by the Ph.D. candidate highlighting the significance of the problem, the technical approach taken, application context and potential, and the scope of the dissertation.
3. A self-contained paper in English based on the dissertation written primarily by the Ph.D. candidate following the Transactions on ITS regular paper requirements.
4. A letter of recommendation from the applicant’s dissertation advisor that comments on the significance of the research, attests to the originality of the work, and comments on the engagement of the student in the field of ITS.

IEEE ITSS Best Practice Award for Engineers

Purpose and Selection Criteria
The IEEE ITSS Best Practice Award for ITS Engineers is given annually for ITS engineers and teams who have developed and deployed successful ITS systems or implementations. This award is established to recognize, promote, and publicize major application innovations with real-world impact.

Application material
Each application must consist of the following material:
1. A 5-page summary of the ITS application providing sufficient detail for evaluation of the novelty and impact of the work.
2. At most 3 letters of recommendation from the customers or users of the developed application attesting to its significance and practical impact.

Application and Selection Process for either Award
Please upload the application packet in pdf-format until May 1, 2009 to the following internet address: http://www.mrt.uni-karlsruhe.de/itssAward

Applications by email are not accepted.

Dedicated selection committees will evaluate the applications for the IEEE ITSS Awards and propose candidates for final approval by the ITSS Board of Governors. The first prize winners will receive awards of USD 1000 each. The second prize winner of the Best Ph.D. Dissertation Award will receive USD 500. Award certificates will be given out at the ITSC 2009 conference where the recipients will be asked to give a brief presentation of their work.
Call for Papers

IEEE Intelligent Transportation Systems
Magazine

Scope
Innovations in mobility require close interaction between research and practitioners in all aspects of Intelligent Transportation Systems. As the new dissemination magazine of the IEEE ITS Society, the IEEE Intelligent Transportation System Magazine establishes an interdisciplinary forum connecting experts in all fields of ITS. It publishes news on ITS as well as peer-reviewed articles quarterly that
- provide innovative research ideas and application results,
- report significant application case studies, and
- raise awareness of pressing research and application challenges
in all areas of intelligent transportation systems.

Topics
- Ground, Air, and Water Transportation Systems
- Information Management (Databases, Data Fusion)
- Sensors (Infrastructure and Vehicle-Based)
- Sensor Data Processing (Video, Radar, Lidar, etc.)
- Human-Machine Interfaces
- Communication (v2v, v2i)
- Social, Economic, and Ecologic impact

Paper Submission
Authors may submit Regular or Short Technical Papers, Tutorials, Surveys, Technology Reviews, Reports on Successful Implementations, Policy, or Educational Issues, directly to the Editor-in-Chief. Papers will be reviewed by independent reviewers and accepted papers will be published in the IEEE ITS Magazine.

IEEE ITS Society web site
Up to date information on the IEEE ITS Magazine is provided at the official ITSS web site www.ieee.org/its

Editor-inChief
For paper submission and further publication guidelines contact the Editor-in-Chief: Prof. Christoph Stiller, Institut für Mess- und Regelungstechnik, Universität Karlsruhe (TH), 76131 Karlsruhe, Germany; email: stiller@mrt.uka.de
Since the advent of Intelligent Transportation Systems, research on the use of information for real-time transportation system management has been much conducted. The recent advances in wireless and sensor technologies have rapidly promoted the seamless integration of information of various types from transportation networks to benefit drivers and provide a wide array of transportation-oriented services. These advances in information technology and wireless communications have enabled innovative and cost-effective mobile services and applications for traffic networks. It is envisioned that inter-vehicle and infrastructure-to-vehicle communications would become technically practical in the near future, resulting in an operational “internet on the road”. Due to its interdisciplinary nature, this area has sparked a great deal of interest among researchers in wireless communication, transportation and traffic engineering, vehicular technologies, network operational research, etc. In addition, the area has gained significant traction with both public agencies and private industry. The goal of this special issue is to bring together the recent advances in vehicular infrastructure integration (VII) and vehicle to vehicle communications (V2V) paradigms that aim to develop efficient information dissemination systems to significantly improve traffic management, safety, and control. The topics of interest include but are not limited to:

- Vehicle to vehicle and vehicle-to-infrastructure communications technologies
- Vehicle mobility management with communications
- Vehicular network modeling and performance analysis
- Algorithms and protocols addressing the integration of communication and transportation layers
- Security and Privacy Issues of VII and V2V systems
- VII and V2V simulation, implementation, and field testing
- VII and V2V applications to road safety

High-quality papers are solicited and will undergo the normal peer-review procedure of the journal for inclusion in the Special Issue. Manuscripts should be submitted before the deadline at [http://mc.manuscriptcentral.com/t-its/](http://mc.manuscriptcentral.com/t-its/) by selecting the manuscript type “Special Issue on VII and V2V”.

**Guest Editors:**
Professor Satish Ukkusuri, Rensselaer Polytechnic Institute, e-mail: ukkuss@rpi.edu
Professor Tricia Chigan, Michigan Technological University, email: cchigan@mtu.edu
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**Important Dates:**
Submission of Manuscripts: 31 July 2009
Peer-Review Results: 31 October 2009
Final Accepted Paper: 31 December 2009
Special Issue Publication: 2010
Abstracts of Papers

IEEE Transactions on Intelligent Transportation Systems, vol. 9, no. 4, December 2008

Yan Wang, Li Bai, Fairhurst, M., "Robust Road Modeling and Tracking Using Condensation," pp 570-579

Abstract: In this paper, we present a robust road detection and tracking method based on a condensation particle filter for real-time video-based navigation applications. The image is divided into horizontal strips, and vanishing point (VP) detection is performed on each image strip. We propose a method for estimating the density of road boundary line segments in the image so that VP detection in an image strip takes into account the detection results in the neighboring image strips. This use of contextual information for VP detection leads to more accurate detection results. The estimated road parameters are then used to initialize the condensation tracker. Experiments using real road videos demonstrate the robustness of our method to difficult road conditions due to the presence of partial occlusion, shadows, and road signs.

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Sarvi, M., Kuwahara, M., "Using ITS to Improve the Capacity of Freeway Merging Sections by Transferring Freight Vehicles," pp 580-588

Abstract: This paper investigates the effect of heavy commercial vehicles on traffic characteristics and operation of freeway merging sections. Freeways are designed to facilitate the flow of traffic, including passenger cars and trucks. The impact of these different vehicle types is not uniform, creating problems in freeway operations and safety, particularly in the vicinity of merging sections. There have been very few studies that are concerned with the traffic behavior and characteristics of heavy vehicles in these situations. Therefore, a three-year study was undertaken to investigate traffic behavior and operating characteristics during the merging process under congested traffic conditions. First extensive traffic data collection captured a wide range of traffic and geometric information using detectors, videotaping, and surveys at several interchanges. The macroscopic detector data were used to identify and quantify the impact of heavy commercial vehicles on the capacity of merging sections. Subsequently, the microscopic data were utilized to establish a model for the behavior of drivers at merging sections. Based on this behavioral model, a microsimulation program was developed to simulate the actual traffic conditions. This model was used to evaluate the capacity of a merging section for a given geometric design and traffic flow condition. In addition, this model was employed to develop a variety of intelligent transport system control strategies that are associated with heavy commercial vehicles with the goal of designing safer and less-congested freeway merging points. The implementation of the proposed control strategies showed significant improvement over the capacity of merging sections.

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Shigang Li, "Binocular Spherical Stereo," pp 589-600

Abstract: A fish-eye camera has a wide field of view (FOV), and the realization of a binocular fish-eye stereo for sensing the surrounding 3-D information of the environment around a vehicle is useful for safe driving. However, since a fish-eye camera may have a wider-than-hemispherical FOV, the conventional stereo approach of obtaining a perspective image based on the pinhole camera model cannot directly be applied. However, using a spherical camera model and defining the disparity of a spherical stereo, the conventional binocular stereo problem is reformulated as a binocular spherical stereo problem. A binocular spherical stereo is a generalized paradigm that can cope with cameras having any FOV, including conventional cameras and fish-eye cameras. Moreover, by transforming the rectified spherical images to latitude-longitude representation, the feature point matching of the spherical stereo images can be sped up by using the processing used for perspective stereo images. The effectiveness of this approach is demonstrated by realizing a binocular spherical stereo using a pair of fish-eye cameras. Finally, the application of the proposed approach to vehicles in the future is considered.

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Abstract: A dynamic discrete-time model of container flows in maritime terminals is proposed as a system of queues. Such queues are controlled via input variables that account for the use of the available resources given by the capacities of the handling machines used to move containers inside a terminal. Two feedback control strategies for the allocation of such resources are described. The first consists of a resource assignment that is proportional to the corresponding queue lengths; in the second, the assignment is obtained by the one-step-ahead optimization of a performance cost function according to a myopic approach. Simulation results are reported to compare such methodologies for the purpose of sensitivity and scenario analyses in the management of a maritime terminal.

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Abstract: Surface transportation systems play a crucial role in responding to natural disasters and other catastrophic incidents that have devastating impacts on the lives of people all over the world. Intelligent transportation systems (ITS) can play an important role not only in improving the operational efficiency of a transportation system but also in enhancing its safety and security. In this paper, we propose new techniques for augmenting ITS to improve and support homeland security. In particular, we propose two evacuation algorithms, i.e., all-links and fastest-links, and perform simulation studies to compare their performance. These algorithms are part of a smart traffic evacuation management system (STEMS) developed to provide rapid and
efficient response to human-caused threats and disasters by automatically generating dynamic evacuation plans based on incident location and scope and subsequently automatically controlling traffic lights to direct evacuation traffic in a safe manner.

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Abstract: An application programming interface (API) is a feature that is available in some traffic simulation programs to enhance their capabilities by allowing users to customize changes in simulation such as driver behaviors, vehicle characteristics, user-defined control strategies, and advanced Intelligent Transportation Systems (ITS) applications. This paper presents an API in AIMSUN, which is a stochastic and microscopic simulation model, to evaluate a novel real-time signal control technique based on the dynamic programming (DP) algorithm. A transportation network of diamond interchanges is first created and calibrated in the AIMSUN environment. The API, which creates a dynamic link between the DP algorithm and AIMSUN, is then developed and deployed in C++. During simulation runtime, real-time traffic measurements, including vehicle counts and speeds, are provided by detectors in the network and fed into the DP algorithm that subsequently makes a decision on a signal control plan. The signal plan is then transferred back to and implemented in the simulated network, which emulates its actual operation. Extensive simulations have shown that the new signal control technique is superior to other common offline signal optimization tools in terms of handling the demand fluctuations. This paper has demonstrated that the API function is a useful tool to assess new ITS applications that are unavailable in simulation programs.

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Abstract: This paper proposes a general framework to study the conflict resolution for multiple intersecting flows of aircraft in planar airspace. The conflict-resolution problem is decomposed into a sequence of subproblems, each involving only two intersecting flows of aircraft. The strategy for achieving the decomposition is to laterally displace the aircraft flows so that they intersect in pairs, and the resulting conflict zones have no overlap. A conflict zone is defined as a circular area that is centered at the intersection of a pair of flows, which allows aircraft approaching the intersection to resolve the conflict completely within the conflict zone without straying outside. An optimization problem is then formulated to minimize the lateral displacements of the aircraft flows. Although this optimization problem is difficult to solve in general due to its nonconvex nature, a closed-form solution can be obtained for three intersecting flows. The minimum requirement of lateral displacements of aircraft flows for conflict resolution can also be used as a metric of traffic complexity for multiple intersecting flows of aircraft. It is shown that the order of growth of this complexity metric is $O(n^3)$ for symmetric configurations of $n$ flows of aircraft.

Abstract: As congestion in the United States National Airspace System (NAS) increases, coordination of en route and terminal-area traffic flow management procedures is becoming increasingly necessary to prevent controller workload excesses without imposing excessive delay on aircraft. Here, we address the coordination of flow management procedures in the presence of realistic uncertainties by developing a family of abstractions for implementable flow restrictions (e.g., miles-in-trail restrictions, ground delay programs, and slot-based policies). Using these abstractions, we are able to evaluate the impact of multiple restrictions on generic (uncertain) traffic flows and, hence, to design practical flow management strategies. We use the developed methodology to address several common design problems, including the design of multiple restrictions along a single major traffic stream and the design of multiple flows entering a congested terminal area or sector. For instance, we find that multiple restrictions along a stream can be used to split the backlog resulting from a single restriction and use this observation to develop low-congestion designs. We conclude the discussion by posing a tractable NAS-wide flow management problem using a simple algebraic model for a restriction.


Abstract: Drivers of heavy goods vehicles are not able to survey the whole surrounding area of their vehicle due to large blind spot regions. This paper shows how catadioptric cameras - a combination of cameras and mirrors - can be used to survey the surrounding area of vehicles. Four such cameras were mounted on a truck-trailer combination, and the images are combined such that obstacles are visible in an image presented to the driver. This image is a bird's eye view of the vehicle. Additionally, corridors indicating the path of motion of the vehicle are overlaid to the resulting image. To compute those corridors, a mathematical description of the path of motion is derived. Such a system does not only support the driver during maneuvering tasks but also increases safety of driving large vehicles.


Abstract: This paper revisits the construction of principal curves. Although they have a solid theoretical foundation as a nonlinear extension to principal components, this paper shows that they are difficult to implement in practice if the data distribution is sparse and uneven or if the data contain outliers. These issues may hamper the application of principal curves to an intelligent transportation system. To address these problems, this paper introduces an adaptive constraint K-segment principal curve (ACKPC) algorithm that can be applied in the presence of
uneven and sparse distributions, as well as outliers. The benefits of the ACKPC algorithm are as follows: (1) It utilizes predefined endpoints of the curve to reduce the computational effort, and (2) it shows to be less sensitive to parameter settings and outliers. These benefits are demonstrated using two benchmark studies and experimental data from a freeway traffic stream system as well as recorded data from a Global Positioning System (GPS) data from a low-precision GPS receiver.

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Abstract: This paper investigates the effect of vehicle front height lowering operation of precrash dipping nose (PCDN) on pedestrians. Although PCDN was developed for vehicle-vehicle side crashes, there is a possibility that the range sensor for crash detection will fail to distinguish a group of pedestrians from a side-faced vehicle. For simulation-based investigation, a vehicle model, an air spring with PCDN actuator, a pedestrian, and active hood system (AHS) were modeled. Two vehicle models were made for a sedan and a sport utility vehicle (SUV), respectively. In all crash situations (frontal crash without AHS, frontal crash with AHS, and side crash without AHS), a falsely operated PCDN is expected to cause worse pedestrian injury. As a conclusion, we insist that PCDN should incorporate a pedestrian-recognition capability into its crash detection system to reduce the improper activation of its actuator. In addition, as AHS showed a good performance even in improper activation, we propose a complementary method that activates AHS when PCDN is activated. It is noteworthy that the increasing importance of pedestrian protection seems to enforce even a system developed for vehicle-vehicle crashes to be investigated from the perspective of pedestrian safety.

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Abstract: We develop an algorithm for predicting the arrival times of a transit vehicle at signalized intersections, with a focus on meeting the accuracy requirement associated with signal priority control applications. The algorithm uses both historical and real-time Global positioning system (GPS) vehicle location data. There are no data from other detectors, such as loops or cameras. The arrival time prediction is formulated as an optimal a posteriori parameter estimation problem, where the model is consisted of a historical model and an adaptive model that adaptively adjusts its filter gain based on real-time data. The estimates generated by these two models are fused in a weighted average derived from the solution of the parameter estimation problem. The prediction algorithm adaptively adjusts its weight distribution using error variances obtained from the two models. We include some simulations of field test results and their statistics to demonstrate the performance and convergence of the solution.
### Officers

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
<th>Institution and Location</th>
</tr>
</thead>
<tbody>
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</tr>
<tr>
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</tr>
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<td>Christoph Stiller</td>
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</tr>
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</tr>
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<td>Transactions Editor</td>
<td>Fei-Yue Wang, CAS, China, and U. of Arizona</td>
<td>Tucson, AZ, USA</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Committee</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awards</td>
<td>Chelsea C. White III</td>
</tr>
<tr>
<td>Conferences and Meetings</td>
<td>Ümit Özgüner</td>
</tr>
<tr>
<td>Constitution and Bylaws</td>
<td>Sudarshan Chawathe</td>
</tr>
<tr>
<td>Fellow Evaluation</td>
<td>Petros Ioannou</td>
</tr>
<tr>
<td>Finance</td>
<td>Daniel J. Dailey</td>
</tr>
<tr>
<td>History</td>
<td>Rye Case</td>
</tr>
<tr>
<td>Long-Range Planning</td>
<td>Fei-Yue Wang</td>
</tr>
<tr>
<td>Member Activities</td>
<td>Christoph Stiller</td>
</tr>
<tr>
<td>Nominations and Appointments</td>
<td>Alberto Broggi</td>
</tr>
<tr>
<td>Publications</td>
<td>Jason Geng</td>
</tr>
<tr>
<td>Standards</td>
<td>Jason Geng</td>
</tr>
<tr>
<td>Student Activities</td>
<td>Shuming Tang</td>
</tr>
<tr>
<td>Technical Activities</td>
<td>Daniel Zeng</td>
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