

YASER E. HAWAS

RECIPIENT OF H.H. SH. KHALIFA AWARD (DISTINCTION IN RESEARCH, 2012)

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EDUCATION

- 1996, **Ph. D.** Department of Civil Engineering, University of Texas at Austin, Austin, Texas, USA.
- 1990, **M. Sc.** Department of Civil Engineering, Cairo University, Egypt.
- 1987, **B. Sc.** Department of Civil Engineering, Cairo University, Egypt.

ACADEMIC POSITIONS

- **2009-Present** **Professor**, Civil & Environmental Engineering Department, UAE University, UAE.
- **2005–Present** **Director**, Roadway, Transportation and Traffic Safety Research Center, **RTTSRC**, UAE University, UAE.
- **2003–2008** **Associate professor**, Civil & Environmental Engineering Department, UAE University, UAE.
- **1998–2003** **Assistant professor**, Civil & Environmental Engineering Department, UAE University, United Arab Emirates.
- **1996-1997** **Lecturer**, Civil Engineering Department, University of Texas at Austin, USA.
- **1996–1998** **Research Associate**, Center of Transportation Research, University of Texas at Austin, USA.

BRIEF:

Dr. Yasser Hawas currently serves as a Professor at the department of Civil and Environmental Engineering at the UAE University. He also serves as the Director of the Roadway, Transportation and Traffic Safety Research Center (RTTSRC) at the UAE University. His primary areas of expertise includes the development of Intelligent Transportation Systems tools for modeling and analysis, advanced control systems, traffic management and operation, development of AI algorithms for real-time control, behavioral modeling, advanced computational tools for network optimization, planning and design, and traffic safety analysis. Being the RTTSRC director his role involves various activities including:

- Coordinating with transport sector stakeholders and private agencies in developing the Regional Transportation Plan including ITS strategies, safety enhancement countermeasures, control and design guidelines, and e-business solutions for general roadway infrastructure and planning.
- Establishing and maintaining effective interagency relationships, as well as promoting cooperation and teamwork among UAE agencies in integrating the transportation work program with region-wide priorities.
- Developing and managing transportation studies including analysis of Traffic Impact Studies of Transportation alternatives.

- Serving on the Traffic Safety strategic plan committee for UAE responsible for setting safety goals and engineering guiding principles for safety policies and regulations and ensuring safety is incorporated into the Transportation Planning Process.
- Serving for multiple complex regional and international transportation projects and performs a wide range of functions including policy analysis, research, data analysis, community outreach and technical assistance, and project and contract management.
- Managing and supervising technical regional/international studies for several agencies including Department of Transport of Abu Dhabi (DOT), National Transport Authority-UAE, Road and Transport Authority-Dubai, Municipality of Al Ain, Ministry of Interior: Traffic Directorate-UAE, Health Authority of Abu Dhabi, General Motors (GM)/Holden, United Nations/ESCWA, and many others.
- Organizing and managing training courses, workshops and conferences to Transportation/ Highway Stakeholders in UAE.

Research and scholarship

Prof. Hawas has authored/co-authored more than 70 international peer-reviewed journal papers and conference peer-reviewed papers. He has also contributed as a speaker in several international conferences, and as a keynote invited speaker in many local/regional conferences. Prof. Hawas contributed to sustaining several types of research and service grants; five NRF and interdisciplinary grants, and six Internal research grants (funded by the UAEU research affairs). Prof. Hawas has carried out as the principal investigator and the project manager several external research and services projects with a value exceeding 17,000,000 AED in total funding.

Prof. Hawas has contributed in the organizing/technical committee of several international, regional and local conferences and symposia. He acted as the head of the organizing/technical committee for the 1st RTTSRC Symposium on Traffic Safety, a member of the organizing/technical committee of the 2nd Gulf Conference on Roads, and a member of the technical committee of the 1st Middle East Conference on ITS. He also acted as a member of the technical committee and associate editor for the 9th, 10th and 11th international conferences on ITS (2006, 2007 and 2008). In addition, he served in the technical committee of the Third International Symposium of Transport Simulation, and the 4th Gulf Conference on Roads. He also served in the technical committee of the 15th International Conference ROAD SAFETY ON FOUR CONTINENTS, Abu Dhabi, March 2010.

Community Services

Prof. Hawas has served on several committees on a departmental committees (including curriculum committee, graduate studies committee, outcome assessment committee, ABET re-accreditation committee), a college level (curriculum committee and merit awards committee) and at a university level (UAEU Transport Sector Committee, UAEU Roads Development Committee, Externally Funded Research (eFORS) Committee). Starting the academic year 2009/2010, Prof. Hawas was selected to become a member of the college board.

Prof. Hawas has contributed to the establishment of two units at UAE University; the Internship Work Integrated Learning, iWIL and the Roadway, Transportation and Traffic Safety Research Center (RTTSRC). iWIL contributions include the development of student workshops for preparation of internship practice. He managed and supervised the delivery of the workshops for all UAEU students. He also contributed to the establishment of the iWIL online management system for recruitment and evaluation. Dr. Hawas' s RTTSRC contributions include the establishment of the facility, administrative work, staff, center strategic planning, sustainability of funding (RTTSRC is established to be a self-sustained unit), managing externally funded projects, in addition to being the principle investigator on the majority of the RTTSRC projects. Currently (eight years after the establishment of RTTSRC), overall, and up to date, RTTSRC total externally funds from research projects, services and grants exceed 17,000,000 AED. RTTSRC is a self-sustained research unit with two branches established in the cities of Al Ain and Abu Dhabi.

He contributed significantly to the establishment of several MOU's between UAEU and various agencies in UAE and abroad, including the MOU between UAEU and Al-Ain Municipality, the UAEU and the Department of Transport- Abu Dhabi, MOU between UAEU and Monash University, and finally the prestigious MOU among the US

Department of Transportation (USDOT) and three ministries in UAE including the Ministry of Higher Education and Scientific Research, the Ministry of Interior and the Ministry of Public works.

He has been serving on many UAE national committees including 1) the steering committee of collaboration between UAEU and Al Ain Municipality, 2) committee formed by the Ministry of Interior on revision of the new traffic law, 3) the committee established by the Ministry of Interior on the supervision of traffic safety studies, 4) the committee formed by the Roads and Transport Authority of Dubai (as a judge) for Sustainable Transportation Awards, and 5) the committee formed by the RTA-Dubai to evaluate RTA's staff research.

Prof. Hawas has acted as reviewer/associate editor for many publications (~100) in international journals and international conferences including refereed papers in international conferences such as the Transportation Research Board Conference, IEEE-ITSC Journal, ASCE-Transportation Engineering Journal, Transportation Research Journal, Fuzzy Sets and Systems Journal, Institute of Transportation Engineering: Transport Journal, Computer Aided Civil and Infrastructure Engineering journal, Transportmetrica journal, Journal of Intelligent Transportation Systems, and Third International Symposium of Transport Simulation.

Prof. Hawas has offered two professional courses for transportation agencies in UAE; a course on the design of highways for ABU Dhabi Municipality- Roads and Infrastructure Directorate, and a course on the planning of public transportation services for Roads and Transport Authority of Dubai.

Teaching and Students

Prof. Hawas has significantly contributed to the development of the course contents of all the undergraduate (five) courses in the field of transportation engineering at UAE University. Furthermore, and with the establishment of the CEE M.Sc. program (in 2007/2008), he contributed to the formation of the transportation track. Prof. Hawas participated in supervising several students during their internship either as a college advisor or as an industry advisor (for those carrying out internship at RTTSRC). Our internship students at RTTSRC are not limited to CEE students, but widely to many UAEU students including Computer Science, Information Technology, and GIS disciplines.

Prof. Hawas supervised several senior graduation projects (capstone courses) during the past fifteen years. He also served on the examination committee of several graduation projects. He was involved in the formulation of the CE M.Sc. Program, the development of the graduate program curriculum and course outlines. As a member of the departmental curriculum committee, he was heavily involved in preparing the new department curriculum, and in reviewing/revising the curriculum several times, (consistent with the ABET recommendations, and 2000 criteria).

With the introduction of the laptop technology in teaching, mostly all courses were modified to be interactive and cooperative courses. He was formally assigned twice to develop laptop courses for the transportation engineering and the highway engineering courses. Aside from formal assignments, all courses are prepared and delivered as laptop courses. All courses' outcomes are assessed continuously in accordance with the ABET guidelines. All courses, being taught as laptop courses, are equipped with in-class assessment tools. Modern technologies are continuously used in teaching all classes. Micro-simulation and traffic analysis tools such as Synchro, TSIS and HCS are used to teach traffic engineering courses. Emme/2 is used to teach transportation engineering courses. KENPAVE is used to teach highway engineering courses.

AREAS OF PROFICIENCY

TRAFFIC SAFETY POLICIES AND PROCEDURES

Safety and roadway design, practical design safety criteria; design consistency, operating speed consistency. Safety evaluation processes; evaluation, safety procedures for road networks, in-depth crash investigation, database development for accidents and accident cost rate. Human factors, driver errors, expectancy, primacy, driver attributes and populations, hazards, risk compensation- driver adaptation, driver workload and mental stress concept. Recent developments in road safety trends, intelligent vehicle systems. Vehicle safety; active and passive safety, crash kinds, biomechanical stress limits.

TRAFFIC OPERATION AND CONTROL FOR ITS APPLICATIONS

Traffic control in general and ITS applications. This includes: Traffic signal design, and operation management. Transit network assessment and design. Real-time dynamic control in large-scale networks for Advanced Traveler Information Systems (ATIS) and Advanced Traffic Management Systems (ATMS) applications. Dynamic Traffic Assignment (DTA) architectures and modeling. Developing, modeling and analysis of real-time Decentralized DTA. Centralized DTA systems for multiple user classes. Dynamic system optimal and user equilibrium algorithms. Rolling horizon formulations for real-time centralized DTA architectures. Developing models for off-line testing of DTA structures. Optimal control theory, dynamic programming formulations and closed loop feedback regulations to freeway operations, and on-ramp metering. Dynamic assignment/signal control models for freeway operations and corridor control. Integrated control of signal settings and traffic assignments using fuzzy logic applications. Route Choice Behavior Modeling. Integrated Fuzzy logic and Neural nets applications (FUZZY-Tech Software). Strategies for calibrating simulation models to support ATIS/ATMS applications. Formulations and procedures for real-time control of isolated intersections. Modeling transit pre-emption operations. Strategies for signalized intersections in large-scale networks using event-based approach. Incident detection and prediction methodologies. On-line control strategies for consistency checking and resetting of real-time control systems. Procedures for on-line O-D demand estimation and prediction.

TRAFFIC FLOW THEORY AND TRAFFIC SYSTEMS OPERATIONS

Theory of traffic flow and applications. Network-level traffic flow theory and two-fluid theory for dynamic traffic networks. TRANSYT-7F to model, simulate and optimize pre-timed signalized intersections. CORQ to model, simulate and control congested corridors. CORSIM (NETSIM, FRESIM) microscopic simulation model. ITRAF, TSIS, TRAPHICS models (CORSIM integrated system). VISIM for microscopic network modeling. SYNCHRO for traffic modeling, simulation and network analysis. HCS-2000 for highway capacity and level of services studies. INTEGRATION for network traffic operation and control. Modeling of un-signalized and signalized intersections (pre-timed, semi actuated, fully actuated, and responsive) using various software such as CORSIM, and SYNCHRO, HCS 2000, and aaSIDRA INTERSECTION, and TRIPS.

TRANSPORTATION PLANNING AND SYSTEMS ANALYSIS

Urban transportation planning methods, including Cohort survival methods for population forecasting, economic activity analysis & allocation models, calibration of transport planning model. Familiarity with activity duration models, multidimensional choice models, nested decision structures, discrete/continuous models, sensitivity bias correction procedures, spatial aggregation and destination choice modeling, dynamic models, and panel sampling strategies and analysis. Various software utilization for transportation planning activities including CUBE, VISUM, Emme-2, and QRS. GIS-based transportation planning applications with Emme-2 and TransCAD.

ADVANCED COMPUTING AND SOFTWARE DESIGN

Extensive experience in programming and skills include all the Visual Suite (Visual Fortran, Visual C++, Visual Basic), Java in addition to the PERL and PROLOG for AI applications. Strong knowledge of data base structures and software, memory management, and dynamic data structures. Familiarity with decentralized computing architectures for development of distributed computational systems.

EXTERNALLY FUNDED PROJECTS

LIST A: RESEARCH PROJECTS/STUDIES IN TRANSPORT POLICIES, PLANNING AND TRAFFIC SAFETY

- [1] **Bus Passenger Origin-Destination Data Collection and Analysis Service in the Emirate of Abu Dhabi. Sponsor: Department of Transport-Abu Dhabi (2013/2014).** This study The purpose of this study is to ensure that DoT provides quality bus services that meet the needs of the bus users and which is also consistent with the DoT's enabling legislation by Understanding the characteristics of the bus passengers, particularly passengers' travel patterns and desire lines
- [2] **The Development of Legislations, Specifications and Driver/Operator Training Manual for Specialized Intercity and International Public Bus Transports. Sponsor: National Transport Authority (2013/2014).** This study aims at developing the necessary federal legislations for public bus operators in the UAE. The study also develops the standards for vehicles for Hajj, tourism and general public transportations both intercity and international. The study also develops specialized bus driver/operator manuals for the specialized bus services.

- [3] **Assessment of Traffic Safety Performance of School Bus Services of Emirates Transport. Sponsor: Ministry of Education/Emirates Transport.** The study aimed at assessing the safety performance of the school busses operated by Emirates Transport. The study carried out comparative assessment vis-à-vis international measures of similar bus operators in USA, Canada, New Zealand, etc. Also, the public and private school operators were thoroughly assessed.
- [4] **In-Depth Crash Investigation of Abu Dhabi. –Sponsor Abu Dhabi Health Authority.** The study established a database of a representative sample (200 crashes per year) of all fatal and severe injury roadway crashes, which take place in the emirate for three years. These accidents are thoroughly investigated in order to understand the true causes and mechanisms that lead to severe injuries and fatalities due to roadway crashes.
- [5] **Standards and Specifications of the Traffic Safety in the UAE. Sponsor: National Transport Authority.** This study aims at reviewing the standards and specifications of traffic safety in the United Arab Emirates. The study presented a detailed review of some studies of traffic safety related to the topics. It also provided a summary of the statistics for traffic accidents in the country, as well as the economic implications of traffic accidents. The study also presented a detailed proposal on the best method to determine speed limits on the roads.
- [6] **UAE Accident Rates, Causes and Interventions. Sponsor: National Transport Authority.** This study aims at identifying some elements of the traffic safety features in UAE. The study carries on a thorough review of the accident rates in the UAE as well as causes. Comparisons with various GCC and Western countries are presented. The study lays the foundations for the initiative of a national strategy for road safety, within the strategic objectives of the National Transport Authority in the UAE.
- [7] **Reality and Requirements of Traffic Safety in the UAE. Ministry of Interior.** This study conducts a thorough review of all the traffic safety elements in the UAE. The study identified a set of factors including the engineering, the enforcement, the educational and the institutional factors. The study review the areas of deficiencies of the traffic safety factors, overview issues of stakeholder coordination, and provide a set of recommendations on how to achieve better traffic safety measures in the country.
- [8] **Development of a GIS Database System for Congestion, Accident Classification and Pedestrian Accidents. Sponsor: Ministry of Interior.** This study aims at reviewing the existing database crash reporting systems and assesses its effectiveness from the standpoint of completeness, validity of data, and usability. The study also suggested the development of an internet-based Geographical Information System GIS for traffic management and traffic safety. The system allows the various concerned stakeholders to interact, feed data, and retrieve information.
- [9] **Use of Advanced Technology for Traffic Monitoring and Enforcement, and Possibility of Privatization. Sponsor: Ministry of Interior.** This study looks into the issues of the existing traffic monitoring technologies and how effective they are to reduce road user violations and roadway crashes. The study provided a detailed budgeted plan to boost the use of traffic monitoring/ITS technologies in enhancing the traffic safety in the UAE.
- [10] **Identification and Improvement of Negative Road User Behaviors. Sponsor: Ministry of Interior.** This study aimed at identifying the most common forms of the negative behavior of road users in the UAE, quantify / scale its size, categorize it, and prioritize it based on size, and to understand the reasons behind negative behaviors. The study also aimed at assessing the laws and regulations of relevance to the study in general and to the identified important negative behaviors in particular.
- [11] **Unification and Development of Standardized Technical Inspections of Vehicles. Sponsor: Ministry of Interior.** This study aimed at reviewing the state of practice in inspecting the vehicle related safety aspects in the UAE. The study looked into various aspects including the homogeneity among the various inspection centers in the UAE. The study also reviewed the International and the GCC Standards that deals with vehicle inspection; e.g. ISO Standards.
- [12] **Developing a Database for Roadway Accidents in the Emirate of Abu Dhabi – Al Ain. Clients: General Motors/ Holden Australia/ Al Ain Police/ Abu Dhabi Health Authority.** The study established a database of a

representative sample of General Motor vehicles that have been involved in injury crashes in Al Ain. These accidents are thoroughly investigated in order to understand the true causes and mechanisms that lead to severe injuries and fatalities due to roadway crashes.

- [13] **Feasibility Study of Umm Al-Qaiwan Emergency Medical Services. Client: Umm Al-Qaiwain Government-Office of Deputy Ruler of Umm Al Qaiwain.** The study aimed at assessing the effectiveness of the EMS services in the Emirate of Umm Al-Qaiwain and provides recommendations on how to boost the service.
- [14] **Development of the Service Policy for the RTA-Marine Agency, Dubai. Sponsor: Marine Agency: Roads and Transport Authority.** This study aimed at establishing a benchmark for the RTA-Marine Agency in Dubai to assess the effectiveness and efficiency of its services for public transport. The study developed a set of policy guidelines with detailed recommendations on how to enhance the operational levels of service. .
- [15] **Assessment of Public Bus Operation and Services in the Emirate of Abu Dhabi.** Sponsor: Department of Transport Abu Dhabi. This project aimed at assessing the operational performance of the public bus services in the Emirate of Abu Dhabi and how to improve such services.
- [16] **Study on the Capacity Building through Cooperation in Developing Interregional Land and Land-Sea Transport Linkage.** ESCWA/ ESCAP Regions - Transport Team within the Globalization and Regional Integration Division (GRID), ESCWA- United Nations.
- [17] **Assessment of Aircraft Noise Impacts Within the Vicinity of the Major Airports in UAE - A of Case of Dubai International Airport.** Client: the Department of Civil Aviation.

LIST B: RESEARCH PROJECTS/STUDIES IN ITS DEPLOYMENTS, SYSTEMS DESIGN AND TRAFFIC CONTROL

- [1] Development of An incident Prediction Algorithm for Proactive Freeway Monitoring and Responsiveness, Center for Transportation Research, University of Texas at Austin, June 1995 (Texas Department of Transportation, USA). Role included the development of an incident prediction algorithm for proactive freeway monitoring and responsiveness. Tasks included the modeling of the entire freeway network of San Antonio, and the design of the loop detection system, camera surveillance system.
- [2] Providing Advance and Real-Time Travel/Traffic Information for Tourists, Center for Transportation Research, The University of Texas at Austin, August 1996. (Texas Department of Transportation, USA). Role included the administration of extensive data surveys, the assessment of various designs of VMS, and kiosk configurations, the modeling of the San Antonio network.
- [3] Assessment of Travel Characteristics Required for the Development of An In-Vehicle Advanced Traveler Information System, Center for Transportation Research, The University of Texas at Austin, May 1996. (Texas Department of Transportation, USA). Role included the administration of extensive data surveys, the assessment of various designs of VMS, vehicle probe tracking systems, and the modeling of the San Antonio network.
- [4] Evaluation of Incident Detection Methodologies, Center for Transportation Research, The University of Texas at Austin, March 1997. (Texas Department of Transportation, USA). Role included the assessment of various detection systems on the control center of TransGuide of San Antonio. Major tasks included are the modeling of the freeway system in San Antonio, the development and calibration of the incident detection algorithms at the center, the assessment of the algorithms effectiveness.
- [5] Simulation of Congested Dallas Freeways: Macroscopic vs. Microscopic, Center for Transportation Research, The University of Texas at Austin, March 1997. (Texas Department of Transportation, USA). Role included the modeling of the entire network of Dallas freeways and arterials using various models including (DYNASMART, CORSIM, and partially Synchro). Extensive traffic analyses of the various junctions, interchanges conditions were also conducted (including the design of signals (pre-timed, actuated), and the ramp metering rates).

- [6] Development of a Simulation-Assignment Model for State estimation and Prediction: Phase II, Center of Transportation Research, The University of Texas at Austin, January 1996-January 1998. (Federal Highway Administration, USA). Role included the development of a simulation-assignment dynamic model for the FHWA. Tasks included the development, the calibration and the assessment of the developed algorithms. The networks of Austin, Dallas and Orange County were modeled using the developed model as well as (CORSIM). Tasks included extensive programming, network modeling and traffic designs of junctions and interchanges ramp metering.

LIST C: CONSULTING PROJECTS (TRAFFIC IMPACT STUDY PROJECTS)

- [1] NadoodJeham Development- Near the Hilli Oman Borderline- Al Ain (Sponsor: Ain Municipality - Internal Roads and Infrastructure Directorate). Carrying on a consulting traffic study to enhance the traffic performance and upgrade the traffic control in the area of the cross-border crossing between Al Ain and Al Buraimi Oman. The project entailed the modeling, the analysis and the design of a traffic network comprising about 30 intersections. Tasks included the simulation modeling, the signal design and the conceptual designs of introduced interchanges.
- [2] Al-Ain Center Business District Area Building Heights Planning Study (Sponsor: Al Ain Municipality- Town Planning/ Ws. ATKINS). Carrying on the traffic study to enhance the traffic performance and upgrade the traffic control in the city center of Al Ain. Tasks included the modeling, the analysis and the design of a network comprising about 20 intersections. Tasks included the simulation modeling, the signal design and the conceptual designs of introduced interchanges.
- [3] Al-Ain School Zone Traffic Study, Al Ain (Sponsor: Ain Municipality - Internal Roads and Infrastructure Directorate). Carrying on the traffic study to enhance the traffic performance and upgrade the traffic control in Al Ain School zone of Al Ain. Tasks included the modeling, the analysis and the design of a network comprising about 30 intersections. Tasks included the simulation modeling, the signal design and the detailed design of all the traffic circulation plans.
- [4] The Establishment of the Traffic Management Center (TMC) and the Police Control Center (PCC) of Al Ain- (Ain Municipality - Internal Roads and Infrastructure Directorate): Writing the RFP for the establishment of the Traffic Management Center. Serving in the steering committee to oversee the deployment of Al Ain TMC. Evaluating technical and financial proposals. Reviewing of conceptual design plans, functional design and detailed designs. The TMC establishment includes the deployment of various systems for integrated signal control, transit preemption, VIP overrides, VMS, CCTV monitoring, incident detection and management, coordination with police response, etc.
- [5] ADNOC/ADCO Twin Towers Traffic Impact Study, Abu Dhabi. Client:ADNOC/OME
- [6] Traffic Impact Study and Parking Requirements for the Feasibility Study of the Zayed Sports City Project- Abu Dhabi. Client: Mubadalah/Ws. ATKINS-
- [7] Gulf Hotel Traffic Impact Study, Abu Dhabi. Client: STOELZLE-SAHIMI Architects
- [8] Jumairah Park Traffic Impact Study. Nakheel/ET&T.
- [9] Jewel of the Creek Development Traffic Impact Study. Kling/PTV.
- [10] Traffic Impact Study of Danet Abu Dhabi Project, ET&T.
- [11] Traffic Impact Study of the Square Development, Dubai, ET&T
- [12] Traffic Impact Study of Esplanade, Dubai, ET&T

UAE UNIVERSITY RESEARCH PROJECTS AND GRANTS

- [1] A Hierarchical Multi-Level Fuzzy Logic Model System for Incident Management, Traffic Control and Transit Preemption. (by Hawas, Y.E, and Hamdouch.)-Ongoing (2011-2014)
- [2] Optimizing the Design of Transit Schedules in Transport Networks with Random Demands. (by Hamdouch, Y. and Hawas, Y.E.)
- [3] Integrated Multi-Modal Transportation Planning Models and Solution Techniques. (by Hamdouch, Y. and Hawas, Y.E.)

- [4] Integrated GIS-T Vehicle Crashes Study in the UAE (by R.M. Arthur, S. Ashur, Y. Hawas, and M. El Sadig), Interdisciplinary project
- [5] Secure Inter-Vehicular Communication: A Cooperative System for Real-Time Knowledge Sharing and Road Traffic Management Applications (by A. Lakas, Y. Hawas, K. Shuaib, M. Boulmalf, E. Barka, M. Merabti, S. Cherkaoui), Interdisciplinary project

INDIVIDUAL FUNDING GRANTS

- [1] Development and Calibration of Accident Management Systems in UAE: A Control Perspective- Phases I, II and III, UAE University, 2002-2003, 2003-2004, 2004-2005. Role: Principle Investigator.
- [2] A GIS-T Case Study of Highway Capacity, Level of Service and Traffic Crashes in the UAE, UAE University, 2002-2003. Role: Co- Investigator
- [3] Design and Management of UAE Highway Systems: Environmental Multi-Objective Approach, UAE University, 2000-2001. Role: Principle Investigator
- [4] Impact Assessment of New Area Development in UAE: The Case of UAE, UAE University, 2000-2001. Role: Co-Investigator
- [5] Development of Integrated Systems for Wide-Area Network Design, and Management in UAE, UAE University, 2001-2002. Role: Principle Investigator
- [6] System Optimum Design of Highway/ Traffic Networks: The case of UAE, UAE University, 1999-2000. Role: Principle Investigator

PUBLICATIONS

INTERNATIONAL JOURNALS' PAPERS

- [1] Hawas, Y.E. (2013) "Simulation-Based Regression Models to Estimate the Bus Routes and Network Travel Times" *Journal of Public Transportation*, Vol. 16, No. 4, 107-130.
- [2] Al Naser, N. Hawas, Y. and Maraqa, M. (2013) "Characterizing driver behaviors relevant to traffic safety: A multi-stage approach" *Transportation Safety & Security*, 5(4), pp 285-313.
- [3] Nurul Hassan, M., Hawas, Y.E. and Ahmed, K. (2013) "A multi-dimensional framework for evaluating the transit service performance" *Transportation Research Part A* 50 (2013) 47–61
- [4] Hawas, Y.E. and Khan, B. (2013) "A Fuzzy Logic Modeling Approach to Assess the Speed Limit Suitability in Urban Street Networks" *Agents and Artificial Intelligence. Communications in Computer and Information Science* Volume 358, 2013, pp 54-68
- [5] Alfalahi, M.B., Hawas, Y.E. and Garib A.M. (2012) "Factorial Experimental Design Models for Asphalt Mix Characteristics" *Emirates Journal for Engineering Research*, 17(1), pp 31-46
- [6] Al Nahyan, M.T, Sohal, A., Fildes, B, and Hawas Y. (2012). "Transportation infrastructure development in the UAE: Stakeholder perspectives on management practice", *Construction Innovation: Information, Process, Management*, Vol. 12 Iss: 4, pp.492 - 514
- [7] Hawas, Y.E., Khan, M. and Maraqa, M. (2012) "Analysis of the Effectiveness of Crash Database System in United Arab Emirates" *Journal of Transportation Safety & Security*, Vol 4, Issue 3, 225-243
- [8] Hawas, Y.E. (2012) "A Cooperative Distributed System for Real-Time Route Guidance", *Journal of Transportation Technologies*, Vol 2, No 3, 230-240, doi:10.4236/jtts.2012.23025 Published Online July 2012 (<http://www.SciRP.org/journal/jtts>)
- [9] Ahmed, F. and Hawas, Y. (2012) "A Threshold-Based Real-Time Incident Detection System for Urban Traffic Networks" , *Procedia - Social and Behavioral Sciences* 48 , 1713 – 1722, Transport Research Arena Conference, Europe 2012
- [10] Al Naser, N. Hawas, Y. and Maraqa, M. (2012) "A Survey-based Probabilistic Statistical Approach for Characterizing Drivers Negative Behaviors" *Procedia - Social and Behavioral Sciences* 48 , 1108 – 1117, Transport Research Arena Conference, Europe 2012

- [11] Hawas, Y, Khan, M, and Basu, N (2012). "Evaluating and Enhancing the Operational Performance of Public Bus Systems Using GIS-based Data Envelopment Analysis" *Journal of Public Transportation*, Vol. 15, No. 2, pp 19-44. <http://www.nctr.usf.edu/wp-content/uploads/2012/07/JPT15.2Hawas.pdf>
- [12] Nada B. Al Naser and Yaser E. Hawas, (2012) "Assessment of Traffic Safety Performance of School Buses in UAE," *International Journal of Engineering and Technology* vol. 4, no. 2, pp. 139-143.
- [13] Nurul Hassan, M., Hawas, Y.E. and Maraqa, M. (2012) "A Holistic Approach for Assessing Traffic safety in the UAE" *Accident analysis and Prevention*, 45, pp554– 564.
- [14] Ahmed, F. M, Hawas, Y.E., Nurul Hassan, M. and Maraqa, M. (2011). "A Framework for the Assessment and Transport Policy Development of the Marine Agency- Dubai, UAE. *Journal of Public Transportation*, 14(1).
- [15] Selim, M.Y.E., Maraqa, M., Hawas Y. and Onsy, A.M. (2011). "Assessment of Vehicle Inspection and Emission Standards in the United Arab Emirates". *Transport. Res. Part D: Transport and Environment*, 16, pp 332-334
- [16] Hawas, Y. E.(2011) 'An integrated simulation-based fuzzy logic model for real-time traffic signal control', *Transportmetrica*, Vol. 7, No. 4, pp. 247–278, First published on: 28 July 2010 (iFirst), pp 1-32 (URL: <http://dx.doi.org/10.1080/18128600903427645>)
- [17] Nurul Hassan, M, Hawas, Y.E., Ahmed, F., Maraqa, M., and Khan, M.B. (2010). "Water-Transit Services in Dubai-UAE: User and Operator Survey Development and Quantitative Analysis" *Journal of Public Transportation*, Vol 13(2), pp:93-114.
- [18] Mohamed, A.M.O., Debebe, A., Sherif, M., and Hawas, Y. (2010) "Development of a Neuro-Fuzzy Logic Model for Estimating Groundwater Levels" *Water Resources Planning and Management*
- [19] Hawas, Y.E., Napeñas, M.J. and Hamdouch, Y. (2009) "Comparative Assessment of Inter-vehicular Communication (IVC) Algorithms for Real-Time Traffic Route Guidance" *Journal of Intelligent Transportation Systems: Technology, Planning and Operations*, Vol 13 (4): 199-217.
- [20] Hawas, Y.E. and Abdel Hameed, M. (2009) "A Multi-Stage Procedure for Validating Microscopic Traffic Simulation Models" *Journal of Transportation Planning and Technology*, Vol. 32, No. 1, pp 71-91
- [21] Hawas, Y.E. (2007). "A Fuzzy-Based System for Incident Detection in Urban Street Networks" *Transportation Research Part C: Emerging Technologies*, 15, pp 69–95
- [22] Hawas, Y.E (2007). A Microscopic Simulation Model for Incident Modeling in Urban Networks," *Transportation Planning and Technology*, Vol. 30, No. 2, pp. 289-309.
- [23] Hawas, Y.E. (2004). "Development and Calibration of Route Choice Utility Models: Factorial Experimental Design Approach." *Journal of Transportation Engineering, ASCE*, Vol 130, No. 2, pp. 159-170.
- [24] Hawas, Y.E. (2004). "Development and Calibration of Route Choice Utility Models: Neuro-Fuzzy Approach " *Journal of Transportation Engineering, ASCE*, Vol 130, no. 2, pp. 171-182.
- [25] Hawas, Y.E. (2004). "A Non-Cooperative Neuro-Fuzzy System for Integrating ATIS and ATMS Decisions" *Fuzzy Sets and Systems*, Vol 144, pp 313-343.
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BOOK CHAPTERS

- [33] Al Nahyan, M.T, Sohal, A., Fildes, B, and Hawas Y. (2011). "Infrastructure Development in the UAE: Communication and Coordination Issues Amongst the Key Stakeholders". Accepted, a book chapter submitted for publication in the book of "Risk Management in Engineering and Construction"

INTERNATIONAL JOURNALS' PAPERS (SUBMITTED AND IN PREPARATION)

- [1] Hawas, Y.E. and Elsayed, H. "Autonomous Real Time Route Guidance in Inter-Vehicular Communication Urban Networks" Paper submitted for publication in the *Vehicular Communication*. **Accepted first round, resubmitted August 2014.**
- [2] Nurul Hassan, M., and Hawas, Y. "A methodology to consolidate transit stops for enhancing transit users travel times", Paper submitted for publication at the *Journal of Advanced Transportation*. **Accepted first round, resubmitted June 2014**
- [3] Ahmed, F. and Hawas, Y. "A Binary Logit-Based Incident Detection System for Urban Traffic Networks" Paper submitted for publication in the *Transportation Engineering Journal, ASCE*, *rejected, to be resubmitted*.
- [4] Hawas, Y, Alam, D. M. "Evaluation of seatbelts and airbags Effectiveness in reducing injury severity of MVC's in the Emirate of Abu Dhabi-UAE", in preparation.
- [5] Hawas, Y, Alam, D. M. "An Empirical Analysis of Rollover Crashes using Abu Dhabi In-Depth Crash Data", in preparation.
- [6] Ahmed, F., Hawas, Y.E. and Maraqa, M. "A Framework for Developing a Policy to Adopt Traffic Safety ITS Technologies" in preparation.
- [7] Hawas, Y.E. "A Rule-Based Fuzzy Logic Model for Signal Control and Transit Preemption in Urban Traffic Networks" in preparation.

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- [1] Nurul Hassan, M., and Hawas, Y. (2013) "An Experimental Research on the Factors of Transit Stop Consolidation", Urban Public Transportation Systems 2013, Ed. Jones Jr., S.L.. Proceedings of the 3rd International Conference on Urban Transportation Systems (ICUTS2013), Paris, France (17-20 November 2013), pp. 193-203, Published by ASCE.
- [2] Ahmed, F. and Hawas, Y. (2013) "A Fuzzy Logic Model for Real-Time Incident Detection in Urban Road Network", proceedings of the 5th International Conference on Agents and Artificial Intelligence (ICAART), Barcelona, Spain (15-18 February 2013).
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- [4] Al Naser, N. Hawas, Y. and Maraqa, M. (2012) "A Survey-based Probabilistic Statistical Approach for Characterizing Drivers Negative Behaviors" proceedings of the *Transport Research Arena Conference*, Greece, March, 2012

- [5] Khan, M. and Hawas, Y. (2012) "Fuzzy Logic Approach for Estimating 85th Percentile Speed Based on Road Attribute Data" proceedings of the 4th *International Conference on Agents and Artificial Intelligence*, Vilamoura, Algarve, Portugal, Feb 6-8, 2012.
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- [8] Al Nahyan, M.T, Sohal, A., Fildes, B, and Hawas Y. (2011). "Views of Contractors and Consultants on Construction Project Management in the United Arab Emirates" proceedings of the *GBATA 13th Annual International Conference*, Istanbul, Turkey, July 12-16th, 2011
- [9] Selim, M.Y.E., Maraqa, M., Hawas Y, and Onsy, A.M. (2011). "Assessing Vehicular Inspection Centers using Multiple Decision-Making Criteria". Proceedings of the *World Congress on Engineering 2011 Vol III*, WCE 2011, July 6 - 8, 2011, London, U.K.
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- [2] Arthur, R., Hawas, Y., and Sadig, M. (2008) "Exploring Traffic Collisions in Al Ain Using GIS" ", proceedings of the *9th Annual Research Conference of the Funded Research at the UAE University*, Al Ain, UAE. 21-23 April 2008
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- [5] S. Thakar, S. Ashur, M. El Sadig, and Y. Hawas "Spatial Analysis of Dubai Traffic Road Accidents using GIS", proceedings of the *7th annual Meeting of the UAE University Research Conference*, April 2006.
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- [7] S.A. Ashur, Y. Hawas, and Kareem Al-Bassioni., A GIS-T Case Study of Highway Capacity, Level of Service and Traffic Crashes in the UAE", proceedings of the *6th Annual Research Conference, UAEU Research Sector*. Al-Ain, Abu Dhabi, UAE. April 23-25 2005.
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- [10] Hawas, Y.E. "Using Advanced Quantitative Methods in Enhancing the Police Services in Rapid Developing Cities", *Urban Safety Conference*, Dubai Police, May 2002.
- [11] Al-Ali, A. Y., Alshamsi, A.M. and Hawas, Y.E. "Structural Performance of Recycled Concrete Aggregates for Road Construction", *First International Conference on Quality control and Quality Assurance of Construction Materials*, Dubai Municipality, October 2001.
- [12] Hawas, Y.E. "Evaluation of Traffic Congestion Impacts in Large Cities in UAE Using Simulation Modeling Systems", *4th Annual Traffic Conference* sponsored by Dubai Police- Research and Studies Center, June 2000.

CONFERENCE/WORKSHOPS PRESENTATIONS

- [1] Hawas Y.E. (2014). "Negative Drivers' Behaviors in the UAE", 1st International Forum on Road Traffic Accidents: Causes, Challenges and Countermeasures (3Cs) 10-11 March 2014, Abu Dhabi, UAE.
- [2] Hawas, Y. and Al Naser, N (2012). "Methods of Estimating Cost Accidents and Application to the UAE", *International Symposium on Traffic Accidents: Effects and Implications*, Abu Dhabi, April 11-12, 2012
- [3] Hawas, Y. and Al Naser, N, and Maraqa, M. (2011) "Multi-Stage Methodology: Statistical Analysis, Experts, Road Users & Psychologists Opinions" *Safe Roads Middle East conference*. November 21-22, 2011, Dubai.
- [4] Hawas (2011) "Intelligent Transportation Systems: Reality, Challenges and Opportunities" invited keynote speaker by Abu Dhabi Police Research Center, Abu Dhabi, October 2011
- [5] Hawas, Y (2010) "ITS Technology for Safety and Congestion Management: Practice Challenges and Opportunities" Invited keynote speaker, 14th Gulf Engineering Forum, Dubai, December, 2010
- [6] Hawas, Y. (2010) "Showcase of a qualitative study approach: The management of transportation infrastructure projects in the UAE". Invited key note speech by Hawas, Y., Road Planning, Design & Construction 2010, Feb 21-24, Dubai, UAE. (Coauthors: M. T. N, Sohal, A., Fildes, B.)

- [7] Y. Hawas (2008). "Traffic Safety Reality and Justifications for Law Refinement Implications of New traffic Law of Abu Dhabi on Traffic Safety Workshop. Abu Dhabi Police GHQ, Abu Dhabi 26 May, 2008, keynote presentation
- [8] Y. Hawas (2008). "On the Challenges and Opportunities of Future ITS Implementations", Gulf Conference on Transportation, 23-24 January, 2008, Dubai, keynote presentation
- [9] Y. Hawas (2007). "Congestion Management: Practice, Challenges and Opportunities", Traffic In Kuwait and its Contemporary Issues Conference, May 2007, keynote presentation.
- [10] Y. Hawas (2007). "Achieving High Performance: Technology Made for Safety and Beyond" Lifecycle Asset Management for Gulf Road Networks Conference, Dubai, January 2007, keynote presentation.
- [11] Y. Hawas (2006). "ITS in UAE: Practice, Challenges and Opportunities" 1st Intelligent Transportation Systems Middle East Conference: Shaping the Future of ITS, December 2006, Dubai, keynote presentation.
- [12] Y. Hawas (2006). "A Panel: End of Free Roads!" ITS in UAE: Practice, Challenges and Opportunities" 1st Intelligent Transportation Systems Middle East Conference: Shaping the Future of ITS, December 2006, Dubai, keynote presentation.
- [13] Y. Hawas (2006). "Advanced Technology for Enhanced Vehicular and Roadway Safety". The 2nd International Road Safety Conference on Roads, Drivers & Road Users, Vehicles and Injury Prevention, 6 -7 November 2006, Dubai, keynote presentation.
- [14] Y. Hawas (2006) "Vision for UAE Roadway Safety" Paper presented at the HCT- Ain Conference on Health and Wellness Conference, Al-Ain, Feb 2006, keynote presentation.
- [15] Y. Hawas. (2006) "Smart Roads: Needs Expressed by Regional Players- Congestion and Parking" Key Note Address at the ROADDEX 2006, Abu Dhabi, March 2006, keynote presentation.
- [16] Y. Hawas. "Technology Made for Safety and Beyond" the ADCO Road Safety Campaign, ADCO, Abu Dhabi, April 2006, keynote presentation.
- [17] Al-Ali, A. Y., Alshamsi, A.M. and Hawas, Y.E. "Assessment of the RCA's Structural Stability for Road Construction: A Deflection-Based Approach", Workshop on Use of Recycled Materials in Engineering, American University in Sharja, May 2002.
- [18] Hawas, Y.E., (1998). "A Heuristically-Based Framework for Off-Line Calibration of Complex Simulation Models" Paper Presented at INFORMS (Institute for Operation Research and Management Sciences) , Cincinnati, May 1999.
- [19] Mahmassani, H.S., and Hawas, Y.E. (1999). "Traffic Network Analysis and Real-Time Assignment Using DYNASMART-X." Paper Presented at the 78th Annual Meeting of the Transportation Research Record, Washington, D.C., January 1999.
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- [23] Hawas, Y.E., Mahmassani, H.S. (1997). "A Cooperative Decentralized Architecture & A Communication Protocol for Dynamic Traffic Assignment," Paper Presented at INFORMS (Institute for Operation Research and Management Sciences), Dallas, October 1997.
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- [25] Hawas, Y.E., Mahmassani, H.S. (1997). "Panel Discussion: Dynamic Traffic Assignment II- Development of Real-Time Systems & Control," A panel discussion, INFORMS (Institute for Operation Research and Management Sciences), San Diego, May 1997.
- [26] Hawas, Y.E., Mahmassani, H.S. (1997). "Panel Discussion: Dynamic Traffic Assignment II- Development of Real-Time Systems, Software Issues & Guidance Systems," A panel discussion, INFORMS (Institute for Operation Research and Management Sciences), San Diego, May 1997.
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- [30] Hawas, Y.E., Mahmassani, H.S. (1996). "Experiments with a Rolling Horizon Dynamic Route Guidance Algorithm: Robustness Under Stochastic Demands," Paper presented at the INFORMS (Institute for Operation Research and Management Sciences), Atlanta, Fall 1996.
- [31] Hawas, Y.E., Mahmassani, H.S. (1995). "Effectiveness and Robustness of Distributed and Centralized Network Route Control Systems", Paper presented at the INFORMS (Institute for Operation Research and Management Sciences), New Orleans Fall 1995 Meeting, October/November, 1995.
- [32] Hawas, Y.E., Mahmassani, H.S. (1995). "Real-Time Local Control Strategies for Vehicular Routing in a Congested Network", Presented at the INFORMS (Institute for Operation Research and Management Sciences) Joint National Meeting, LA., California, April, 1995.
- [33] Hawas, Y.E., Mahmassani, H.S., and Abdelfatah, A.S. (1995). "Computational Experiments with a Dynamic Traffic Network Assignment Algorithm", Presented at the INFORMS (Institute for Operation Research and Management Sciences) Joint National Meeting, LA., California, April, 1995.
- [34] Hawas, Y.E., Mahmassani, H.S. (1994). "Local Control and Search Strategy for Vehicle Routing in a Network Under Limited Real-Time Information" Paper presented at the 73rd Annual Meeting of the Transportation Research Board, Washington D.C. January 1994.

THESIS SUPERVISION

- [1] Development of an Integrated Incident and Transit Priority Management Control System. Ph.D. Dissertation. UAE University. Role: Main advisor. Starting January 2010, Role: Main advisor. Status: completed, **May 2014.**
- [2] A Two-Stage Fuzzy Logic Model for Signal Design and Phase Sequencing in Urban Traffic Networks. M.Sc. in Civil Engineering. Role: main advisor. Status: started September 2013 (ongoing).
- [3] Management of Transportation Infrastructure Projects in United Arab Emirates. A joint supervision of a Ph.D. Dissertation with Monash University Australia. Role: co-advisor. Status: completed Feb 2013.
- [4] A Heuristic Methodology for Optimizing Transit Users' Travel Times by Consolidating Transit Route Stops. M.Sc. in Civil Engineering.. Role: main advisor. Status: completed January 2013.
- [5] Assessing the Methodology of Setting Posted Speed Limits in Al Ain-UAE M.Sc. in Civil Engineering. Role: Main advisor. Status: Finished June 2011
- [6] Impact of Traffic on Ambient Air Quality in Al-Ain City- UAE (Saleh Mohamed BaniHashim). Role: Co-Advisor. Status: Finished 2010
- [7] Assessment of Aircraft Noise Impacts Within the Vicinity of the Major Airports in UAE - A of Case of Dubai International Airport (Maryam Al Biloushie). Role: Co-advisor with Dr. M. Maraqa. Status: Finished 2008
- [8] Development of AC Mix Guidelines for Pavement Management Systems (Mubarak Al-Falah). Role: Advisor. Status: Finished 2004.
- [9] Assessment of the Recycled Concrete Aggregates Structural Suitability for Road Construction, by: Abdulla Yousef Ali Al-Ali. Role: Co-Advisor with Dr. Abdulla Al-Shamsi. UAEU, June 2001.

SAMPLE TECHNICAL REPORTS

- [1] Al-Ain Building Heights Implications on Transportation Network, August 2007, Report Submitted to the Town Planning Directorate, Al-Ain Municipality, Department of Municipalities and Agriculture.
- [2] Al-Ain Private School Zone Traffic Study: Data Collection, September 2006, Report Submitted to the Roads and Infrastructure Division, Al-Ain Municipality, Department of Municipalities and Agriculture.

- [3] Al-Ain Private School Zone Traffic Study: Short Term Strategies and Parking Management, November 2006, Report Submitted to the Roads and Infrastructure Division, Al-Ain Municipality, Department of Municipalities and Agriculture.
- [4] Al-Ain Private School Zone Traffic Study: Model Validation and Forecasting, October 2006, Report Submitted to the Roads and Infrastructure Division, Al-Ain Municipality, Department of Municipalities and Agriculture.
- [5] Al-Ain Private School Zone Traffic Study: Final Strategies, December 2006, Report Submitted to the Roads and Infrastructure Division, Al-Ain Municipality, Department of Municipalities and Agriculture.
- [6] Regional Report on Inter-Regional and Land-Sea Transport Linkages and the Border Crossing Formalities between ESCWA and ESCAP" Final report submitted to the ECONOMIC AND SOCIAL COMMISSION FOR WESTERN ASIA (ESCWA), January 2006.
- [7] Feasibility Study of Umm Al-Qaiwain Emergency Medical Services" Final report submitted to office of Umm Al Qaiwain Deputy Ruler, Feb 2006.
- [8] Sensitivity Tests and Guidelines for the System Optimal Dynamic Traffic Assignment Procedures for ATIS/ATMS, Technical Report DTFH61-90-R-00074-BX, Center for Transportation Research, The University of Texas at Austin, August 1994; Federal Highway Administration.
- [9] CORSIM Modeling Limitations and List of Required Enhancements for DTA Off-Line Testing, Technical Memorandum DTA.UTA.96.1.1, Center for Transportation Research, The University of Texas at Austin, January 1996; Federal Highway Administration.
- [10] Functional Requirements Analysis of a Deployable Real-Time Dynamic Traffic Assignment System, Technical Research Report ST067-85-TASK A, Center for Transportation Research, The University of Texas at Austin, January 1996; Federal Highway Administration.
- [11] Review of Dynamic Traffic Assignment and Related Procedures for Real-Time ATMS/ATIS Operations, Technical Report ST067-85-TASK B, Center for Transportation Research, The University of Texas at Austin, January 1996; Federal Highway Administration.
- [12] Conceptual Design for Real-Time Dynamic Traffic Assignment System, Technical Report ST067-85-TASK C, Center for Transportation Research, The University of Texas at Austin, March 1996; Federal Highway Administration.
- [13] Analytical and Algorithmic Aspects of the Real-Time Dynamic Traffic Assignment Procedures for ATIS/ATMS Operations, Technical Report ST067-85-TASK D, Center for Transportation Research, The University of Texas at Austin, September 1996; Federal Highway Administration.
- [14] Development of DYNASMART-X Software for Real-Time Dynamic Traffic Assignment, Technical Report ST067-85-TASK E, Center for Transportation Research, The University of Texas at Austin, March 1997; Federal Highway Administration.
- [15] Development of Incident Prediction Algorithms for Freeway Traffic Management, Technical Research Report 2977-1F, Center for Transportation Research, The University of Texas at Austin, November 1997; Federal Highway Administration.

PUBLIC OUTREACH: NEWSPAPER ARTICLES

Prof. Yaser Hawas has been quite active in the public outreach. Over the past academic year, Prof. Hawas has participated in publishing more than 30 newspaper articles in various subjects in several newspapers, including Ithad, Gulf NEWS, The National, etc. All newspaper articles can be found at the news article links on the RTT SRC website (www.transport.ae)

RECENT INTERNATIONAL COLLABORATION ON RESEARCH

Prof. Yaser Hawas has been quite active in investigating opportunities of collaborative research with international research entities. Over the years, Prof. Hawas has established strong ties with University of Ferrara, Italy, who also serves as the INOCENT program coordinator in the Middle East. Several meetings were arranged and proposals of research ideas were exchanged. This is likely to materialize into a significant research project to be carried out between RTT SRC and EU entities.

In addition, Prof. Hawas has been also involved with the Center for Infrastructure, Transportation, and the Environment, Rensselaer Polytechnic Institute in addition to (Kyoto University) and (Delft University) to establish a research consortium that will submit a proposal to the Volvo Research and Education Foundation (VREF) for the establishment of a Center of Excellence (COE) on Sustainable Urban Freight Systems.

RTTSRC Highlights

1. The RTTSRC was established by the chancellor decree, June 2004.
2. Over the past eight years, the RTTSRC conducted several research and consulting services adding up total budget to about AED 17,000,000. The center was established to be a self-sustaining unit of the UAEU university
3. The RTTSRC has established MOU with Al Ain Municipality, Abu Dhabi Municipality, Department of Transportation- US (US-DOT), Monash University- Accident Research Center (MUARC), Department of Transport (DOT) - Abu Dhabi, National Transport Authority, and Queens University-Australia.
4. The current full-time and part-time research assistants are 19.
5. The RTTSRC is registered as a certified consultant in the Emirate of Abu Dhabi, 2009.
6. Visit RTTSRC website at: www.transport.ae

PROFESSIONAL SERVICES

UNIVERSITY ACADEMIC COMMITTEE SERVICES

DEPARTMENT COMMITTEES

- AE Faculty Performance Evaluation Committee (2013/2014)-Chair
- EE Faculty Performance Evaluation Committee (2011/2012, 2012/2013)-Chair
- Promotion Committee (2009/2010, 2010/2011, 2011/2012, 2012/2013, 2013/2014)-Chair
- Committee on Developing Minors in CEE (2012/2013)-Chair
- ABET CEE Re-accreditation Committee (2001/2002, 2004/2005, 2005/2006, 2006/2007, 2007/2008, 2008/2009)
- CEE Curriculum Committee (1998/1999, 1999/2000, 2000/2001, 2001/2002, 2002/2003, 2003/2004, 2004/2005, 2005/2006, 2006/2007)
- CEE Outcome Assessment Committee (2000/2001, 2001/2002, 2002/2003, 2003/2004, 2004/2005, 2005/2006, 2006/2007)
- CEE Graduate Studies Committee (2001/2002, 2002/2003, 2003/2004, 2006/2007, 2008/2009, 2009/2010, 2010/2011)
- Seminars and Scientific Activities Committee (2000/2002, 2002/2003)
- Computer and Internet Committee (1998/1999, 2002/2003)
- Student Recruitment Committee (2001/2002)

ENGINEERING COLLEGE COMMITTEES

- College Promotion Committee (2011/2012, 2012/2013, 2013/2014, 2014/2015 Chair)
- College Board Member (2009/2010, 2010/2011)
- College Curriculum Committee (2002/2003, 2003/2004, 2004/2005, 2005/2006)
- College Merits Awards Committee (1999/2000, 2000/2001, 2001/2002, 2002/2003, 2003/2004, 2004/2005)

UNIVERSITY COMMITTEES

- College of Engineering's Dean Review (2009/2010)
- eFORS Committee (2006/2007, 2007/2008)
- UAEU Transport Sector Committee (2005/2006, 2006/2007)
- UAEU University Highway Committee (2004/2005, 2005/2006, 2006/2007, 2007/2008)

OTHERS

- General Cultural Courses Proctoring Services
- Undergraduate/Graduate Academic Advising
- Teaching Assistant Academic Advising
- Supervision of Internship Undergraduate Students (Site and Academic)
- Graduate Project Examination Committee
- Development of Academic MOU (UAEU/Monash University-Australia)

ESTABLISHMENT OF ACADEMIC UNITS

- Iwil : Integrated Work Internship Learning Unit (2002-2004)
- RTT SRC: Roadway, Transportation and Traffic Safety Research Center (2004-Current)

COMMUNITY SERVICES

- A member of the Judge's panel of the RTA Scientific Research Award, Roads and Transport Authority, 2012/2013, 2013/2014, 2014/2015
- A member in the Judge's Panel in the "Safety" Award category at the Dubai Award for Sustainable Transport (DAST) 2010, 2011, 2012, 2013, 2014.
- MOC Coordinator with US-DOT (2005-2006): Organizing the establishment of a Memorandum of Cooperation between the US Department of Transportation (USDOT) and:
 1. The Ministry of Higher Education and Research, UAE
 2. The Ministry of Interior, UAE
 3. The Ministry of Public Works, UAE

- MOU between UAEU and Al-Ain Municipality (2003-2004)
- MOU between the UAEU and the Queensland University of Technology-Australia
- MOU between UAEU and Department of Transport (DOT)- Abu Dhabi (2007-2008)
- Member of the committee established by (H.H. Sh. Saif bin Zayed) Minister of Interior to oversee the development of traffic studies for the Ministry of Interior, (April 2008).
- Member of the committee established by (H.H. Sh. Saif bin Zayed) Minister of Interior to oversee the revision for the new traffic law for the Ministry of Interior, March 2008- July 2008.
- A member in the Judge's Panel in the "Safety" Award category at the first ever Dubai Award for Sustainable Transport (DAST) founded by the Roads & Transport Authority DAST aims at recognizing and highlighting the best practices and applied initiatives that promote the general principles of sustainable transportation. Committee formed May 2008.
- Member of the steering committee of collaboration between UAE University and Al-Ain Municipality (2005-current).
- Member of the committee on establishing the "Traffic Management Center" of Al-Ain municipality, March 2004-2006.
- A member of the Sub-committee on Asphalt Mixtures and their Constituents, the General Secretary of Municipalities-UAE (1999-2002).
- Representative of the Ministry of Higher Education-UAE, Member of "Developing a National Traffic Safety Strategic Plan" Committee (Ministry of Interior-UAE), 2004-2005.

DELIVERY OF PROFESSIONAL COURSES AND WORKSHOPS

- [1] Roads and Transport Authority- Dubai. Course Title: "Public Transportation Service and Operations Planning". March 2008.
- [2] Workshop organized by the Department of Civil Service, National School of Government, Top Management Program. Workshop title: "Collaborative Inquiry on Road Deaths, Abu Dhabi". May 19th, 2008. Presentation Title "Traffic Safety in UAE: Introduction to Research Methods".
- [3] Roads and Infrastructure Department- Abu Dhabi Municipality. 3/6/2006 – 6/6/2006. Course Title: "Highway Engineering: Geometric and Structural Design".
- [4] Symposium on "Traffic Safety in UAE: Reality and Vision" March 12-14, 2005. Parallel workshops included:
 - Use of traffic simulation and GIS for accident management and analysis
 - Mapping and reconstruction of traffic accidents
 - First aid and trauma management of road traffic accidents

INVITED KEYNOTE SPEAKER PRESENTATIONS

- [1] In-depth Crash Investigation Study- Hosted by Al Dammam University-Aramco Traffic Safety Chair, June 2014
- [2] 1st International Forum on Road Traffic Accidents: Causes, Challenges and Countermeasures (3Cs) 10-11 March 2014, Abu Dhabi, UAE.
- [3] First International Conference on Traffic Safety: Youth and Road Safety- Challenges and Solutions. Abu Dhabi, November 2013.
- [4] International Symposium on Traffic Accidents: Effects and Implications, Abu Dhabi, April 11-12, 2012
- [5] Edmonton's 4th International Conference on Urban Traffic Safety: BUILDING SAFER COMMUNITIES: Interdisciplinary Approaches to Improving Urban Traffic Safety | April 23-26, 2012 | Edmonton, Alberta, Canada.
- [6] Safe Roads Middle East conference. November 21-22, 2011, Dubai. "CHARACTERIZING THE ROAD USER BEHAVIORAL ASPECTS OF RELEVANCE TO TRAFFIC SAFETY IN THE UAE: A MULTI-STAGE APPROACH"
- [7] Abu Dhabi Police Research Center, October 2011 "Intelligent Transportation Systems: Reality, Challenges and Opportunities"
- [8] ITS Middle East, Abu Dhabi, September 2011. "Evaluating methods of incident management and detection"
- [9] 14th Gulf Engineering Forum, Dubai, December, 2010 " ITS Technology for Safety and Congestion Management: Practice Challenges and Opportunities"
- [10] "Implications of New traffic Law of Abu Dhabi on Traffic Safety" Workshop. Abu Dhabi Police GHQ, Abu Dhabi 26 May, 2008. "Traffic Safety Reality and Justifications for Law Refinement"
- [11] Gulf Conference on Transportation, 23-24 January, 2008, Dubai. "On the Challenges and Opportunities of Future ITS Implementations".

- [12] The 2nd International Road Safety Conference on Roads, Drivers & Road Users, Vehicles and Injury Prevention, 6 -7 November 2006 Dubai - United Arab Emirates. "Advanced Technology for Enhanced Vehicular and Roadway Safety"
- [13] 1st Intelligent Transportation Systems Middle East Conference: Shaping the Future of ITS. "ITS in UAE: Practice, Challenges and Opportunities"
- [14] Lifecycle Asset Management for Gulf Road Networks Conference (January 2007). "Achieving High Performance: Technology Made for Safety and Beyond"
- [15] Traffic In Kuwait and its Contemporary Issues Conference. Presentation "Congestion Management: Practice, Challenges and Opportunities" May 2007.
- [16] "Vision for UAE Roadway Safety" HCT- Ain Conference on Health and Wellness Conference, Al-Ain, Feb 2006.
- [17] "Smart Roads: Needs Expressed by Regional Players- Congestion and Parking" ROADEX 2006, Abu Dhabi, March 2006.
- [18] "Technology Made for Safety and Beyond" at the ADCO Road Safety Campaign, ADCO, Abu Dhabi, April 2006.
- [19] "Using Advanced Quantitative Methods in Enhancing the Police Services in Rapid Developing Cities" Urban Safety Workshop, Dubai Police, May 2002.
- [20] "Evaluation of Traffic Congestion Impacts in Large Cities in UAE Using Simulation Modeling Systems" Fourth Traffic Conference Workshop, Dubai Police - Research and Studies Center. June 2000.

CONFERENCE TECHNICAL COMMITTEE MEMBERSHIP

- [1] 2nd Conference on Gulf Roads, Abu Dhabi, UAE, March 2004
- [2] Chair of technical/ organizing committee of the symposium on "Traffic Safety in UAE: Reality and Vision," United Arab Emirates University, March 2005.
- [3] The 2nd International Road Safety Conference on Roads, Drivers & Road Users, Vehicles and Injury Prevention, 6 -7 November 2006 Dubai - United Arab Emirates.
- [4] 1st Intelligent Transportation Systems Middle East Conference: Shaping the Future of ITS, December 2006.
- [5] Lifecycle Asset Management for Gulf Road Networks, Dubai, January 2007
- [6] Traffic Safety Awareness, Our Safety Our Responsibility, Feb 2007.
- [7] 10th International Conference on Intelligent Transportation Systems Conference, Seattle, Washington, USA, September 2007 (<http://www.itsc2007.org>) Associate Editor and Technical Committee Member.
- [8] Gulf Conference on Transportation, 23-24 January, 2008, Dubai.
- [9] The Third International Symposium on Transport Simulations (ISTS08), Australia, August 2008
- [10] The 11th International IEEE Conference on Intelligent Transportation Systems (<http://www.ieeeitsc.org/>). October 12-15, 2008, Beijing, China. International Technical Committee Member.
- [11] 4th Conference on Gulf Roads-Qatar, November 2008.
- [12] 15th International Conference ROAD SAFETY ON FOUR CONTINENTS, Abu Dhabi, March 2010.
- [13] 16th International Conference ROAD SAFETY ON FOUR CONTINENTS, Beijing, CHINA, 15-17 May 2013.

APPRECIATION CERTIFICATES

- [1] Appreciation certificate from Abu Dhabi Police Research Center for role in delivering a workshop entitled "Intelligent Transportation Systems: Reality, Challenges and Opportunities" Oct 2011.
- [2] Appreciation certificate from Al Ain Municipality for role in participating in the PESTEL Analysis workshop, 2011
- [3] Appreciation Certificate from the Gulf Engineering Society for role in the 14th Gulf Engineering Forum, Dubai, December, 2010
- [4] Appreciation certificate from the internship unit at the College of Information Technology for providing professional experience and efforts to IT-UAEU intern students, May 2010
- [5] Appreciation certificate from the UAE Society on Traffic Safety for role in organizing scientific events, 2010
- [6] Appreciation certificate from the Roads and Transport Authority –Dubai for role as a member in the Judge's Panel in the "Safety" Award category at the Dubai Award for Sustainable Transport (DAST) 2011.
- [7] Appreciation Certificate from the Gulf Engineering Society. January 2010.
- [8] Appreciation certificate from the Marine Agency- Roads and Transport Authority, Dubai, for the outstanding partnership and lasting contributions to the project of MR104- Development of Operational Policies, 2009
- [9] Appreciation Certificate from the Gulf Roads Engineering Society for role in organizing the Gulf Conference on Transportation. January 2008.
- [10] Appreciation Certificate from the Umm Al Moumineen Association-(Ajman, UAE) for the Evaluation of the Research Awards for the Rashid Bin Humaid for Science 2006. April 2007.

- [11] Certificate of recognition from Vice Chancellor UAE University: "in recognition of the invaluable contributions to the successful participation of "Environment Conference & Exhibition 2005". University organizing committee for ERWDA/IDEX
- [12] Certificate of Appreciation from Assistant Provost for Research: "in recognition to the invaluable efforts in Organizing the symposium on Traffic Safety in UAE" March 2005
- [13] Certificate of Appreciation from Assistant Provost for Research: "in recognition to the invaluable efforts in Organizing the MOU between Al Ain Municipality and the UAE University, December 2003
- [14] Certificate of Appreciation from Assistant Provost for Research: "in recognition to the invaluable efforts in Preparing a proposal for the establishment of Dubai's Municipality Diploma in Highway/Traffic Engineering, December 2003

TEACHING EXPERIENCE

COURSES TAUGHT AT UNITED ARAB EMIRATES UNIVERSITY (FEB 1998-CURRENT)

College Requirement Courses

- Fundamentals of Engineering (1-B)
- Math and Engineering Applications II

Civil engineering Courses

- | | |
|--|--|
| <ul style="list-style-type: none"> • Highway Engineering • Transportation Engineering • Traffic Engineering • Advanced Highway Engineering | <ul style="list-style-type: none"> • Special Topics in Transportation Engineering • Special Topics in Transportation Engineering (Traffic and Environmental Engineering/ Cooperative teaching) |
|--|--|

Graduate Courses

- | | |
|--|---|
| <ul style="list-style-type: none"> • Operational Research in CE • Statistics and Quality Assurance for CE • Advanced Traffic Engineering and Management • Design of Transportation Systems • Transportation Planning: Technologies and Techniques | <ul style="list-style-type: none"> • Theory and Design of Pavement Structures • Special Topics in Ceramic Materials (Highway Engineering Materials) • Independent Studies in Ceramic Materials (Highway Engineering Materials) |
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COURSES TAUGHT AT UNIVERSITY OF TEXAS AT AUSTIN (1996/1997)

Graduate Courses (M.Sc. Civil Engineering- Transportation)

- Transportation Planning: Technologies and Techniques

SUPERVISION OF SENIOR GRADUATION PROJECTS

- Evaluation and Design of Urban Traffic Networks Using Simulation Highway Network Design Using Simulation Modeling and Expert Systems
- Design of A Waste Water Treatment System and a Major Highway Network in a Typical City. Joint With Dr. M. Maraqa.
- Development of an Expert System Tool for Highway Structural Design and Material Selection. Joint with Dr. A.M.O. Mohamed
- Re-Design of the Urban Highway Network in Dubai
- Re-Design of an Urban Highway Network in Dubai: A Simulation Approach Development of An Expert System for Integrated Traffic Management
- Development of An Expert System for Pavement Management
- Design of a Transportation Geographic Information System (GIS-T) and a Traffic Simulation (TRAF) Networks for Al Ain
- Development of a GIS Network for Pavement Management Systems
- The Geometric and Structural Design of Arterial Interchange. Joint with Dr. Al Sawy K.
- Traffic Analysis and Design of the Downtown Area in Al-Ain
- Design the Roadway Infrastructure Facilities for Al-Ain Civic Center

COURSE DEVELOPMENT (INNOVATIONS IN TEACHING METHODOLOGY/ TECHNIQUES)

- [1] **Project:** Using Simulation Software in the Analysis and Development of Management Strategies for Traffic Congestion Problems in UAE. **Course: Special Topics in Transportation Engineering**
- [2] **Project:** Geometric and Structural Designs of Highway Networks in UAE. **Course: Highway Engineering**
- [3] **Project:** Impact of Vehicular Traffic in the UAE on Air Quality: A case Study. **Course: Special Topics in Transportation Engineering/ Sp. Topics in Env. Engineering.** Dr. Munjed Maraqa and Yaser E. Hawas
- [4] **Project:** Development of Interactive Teaching Animation Media and In-Class Assessment Tools for Highway Engineering Design: Phase-I. **Course: Highway Engineering**

LAPTOP COURSE DEVELOPMENT

The following two courses were developed to be fully interactive to encourage cooperative learning:

- [1] **Transportation Engineering:** 2004-2005.
- [2] **Highway Engineering:** Summer 2004-2005.

CEE GRADUATE COURSE DEVELOPMENT

Development of the following M.Sc. courses:

- [1] Operational Research in CE
- [2] Statistics and Quality Assurance for CE
- [3] Theory and Design of Pavement Structures
- [4] Pavement Management Systems
- [5] Advanced Traffic Engineering and Management
- [6] Design of Transportation Systems

CONTRIBUTION TO THE DEVELOPMENT OF ACADEMIC PROGRAMS, CURRICULA AND LABORATORIES

- [1] M.Sc. Civil Engineering Program
- [2] CE and CEE Undergraduate Programs and Tracks
- [3] CEE Transportation Engineering Laboratory

WORKSHOPS ATTENDED ON TEACHING

- [1] Workshop on Enhancing Teaching Methods: Web Page Development, United Arab Emirates University. April 1999
- [2] Outcome Assessment Workshop – Faculty of Engineering, March 2001.
- [3] The Capstone Courses Workshop –Faculty of Engineering, April 2001.
- [4] ABET- Outcome Assessment Workshop-College of Engineering, Sept. 2001.
- [5] Teaching New Methodologies, October 2001.
- [6] Mapping Educational Outcomes, December 2001
- [7] Laptop workshops offered by William Moss, Professor of Mathematical Science at Clemson University
 - i. 3/17/2002 Laptop Pedagogy Overview: How Can Laptops Enhance Learning Inside and Outside the Classroom?
 - ii. 3/17/2002 How Laptops Have Been Used in Humanities, Engineering, Science and Mathematics at Clemson?
 - iii. 3/18/2002 What components should be included?
 - iv. 3/19/2002 Laptop Technical Issues
 - v. 3/19/2002 Inventory of Useful Software
 - vi. 3/19/2002 A Short SUCCEED Teaching Effectiveness Workshop
- [8] ABET- Outcome Assessment Workshop-College of Engineering, Sept. 2004.
- [9] ABET- Outcome Assessment Workshop-College of Engineering, Sept. 2006.

PROFICIENCY WITH SPECIALIZED SOFTWARE

TRAFFIC OPERATION AND CONTROL

- | | |
|---------------|---|
| • VISSIM | • DYNASMART |
| • SYNCRO 7 | • TSIS SUITE 5.1(CORSIM: FREESIM AND NETSIM, ITRAF) |
| • TRANSYT 7-F | • CRASH 7 (FOR ACCIDENT RECONSTRUCTION) |
| • HCS-2000 | |
| • INTEGRATION | |

TRANSPORTATION PLANNING AND GIS-BASED TRANSPORTATION APPLICATIONS

- VISUM, VISEM
- EMME-3
- TRASCAD

- CUBE
- QRS

GEOMETRIC & STRUCTURAL DESIGN & PAVEMENT MANAGEMENT SYSTEMS

- SDR-MAPPING
- HDM-4

- KENPAVE

OTHERS

- MS-PROJECT (FOR PROJECT MANAGEMENT)
- NVIVO (FOR QUALITATIVE ANALYSIS)
- FUZZY TECH (FOR FUZZY LOGIC AND NEURAL
NETS APPLICATIONS)

