

Selected Papers and Reports

Alouini, M.S. (2002). A closed-form expression for the exact BER of generalized QAM constellations. *Proceedings of the 5th NORDIC Signal Processing Symposium*.

Alouini, M.S. (2002). Adaptive FSK modulation for vehicular power efficient transmission over fading channels. *Proceedings of the IEEE Vehicular Technology Conference*.

Alouini, M.S. (2002). Effect of imperfect phase and timing synchronization on the error rate performance of PSK modulations. *Proceedings of the IEEE Vehicular Technology Conference*.

Alouini, M.S. (2002). Variable rate noncoherent M-FSK over Nakagami fading channels. *Proceedings of the IEEE Global Communications Conference*.

Bloomfield, J.R., Harder, K.A., and Chihak, B.J. (2003). The use of tactile and auditory lane departure warnings in a field operational test. In P.T. McCabe (Ed.), *Contemporary Ergonomics 2003*, 325–330. London: Taylor and Francis.

Davis, G., and Pei, J. (in press). Bayesian networks and traffic accident reconstruction. *Proceedings of the 9th International Conference on Artificial Intelligence and Law*.

Davis, G. (2002). Towards a unified approach to causal analysis in traffic safety using structural causal models. In M. Taylor (Ed.), *Transportation and Traffic Theory in the 21st Century*, 247–266. Pergamon.

Digham, F.F., Alouini, M.S., and Arora, S. (2003). Variable-rate variable-power M-FSK scheme for

power limited systems. *Proceedings of the IEEE International Conference on Communications*.

Douma, F. (2003). Mapping the terrain of information and communications technology (ICT) and household travel. *Proceedings of the 82nd Annual Meeting of the Transportation Research Board*.



Frank Douma

Douma, F. (2003). The promise of the global positioning system (GPS) in “services-on-demand” public transportation systems. *Proceedings of the ITS America 2003 Annual Meeting*, CD-ROM.

Douma, F. (2003). Stranded but connected? Case study of wireless ITS systems for emergency medical services in small town and rural environments. *Proceedings of the 82nd Annual Meeting of the Transportation Research Board*.

Gillen, D., and Levinson, D. (Co-ed.). (2003). *Assessing the Benefits and Costs of Intelligent Transportation Systems*. Kluwer Academic Publishers.

Hahn, J.O., Rajamani, R., and Alexander, L. (2002). GPS-based real-time identification of tire-road friction coefficient. *Proceedings of the ASME International Mechanical Engineering Congress*

and Exposition.

Hahn, J.O., Rajamani R., You, S.H., and Lee, K.I. (2002). Road bank angle estimation using disturbance observer. *Proceedings of the International Symposium on Advanced Vehicle Control*.

Holm, H., Øien, G.E., Alouini, M.S., Gesbert, D., and Hole, K.J. (2003). Optimal design of adaptive coded modulation schemes for maximum average spectral efficiency. *Proceedings of the IEEE Workshop on Signal Processing Advances in Wireless Communications*.

Horan, T., and Schooley, B. (2003). Stranded but connected: findings from wireless EMS case studies. *Transportation Research Record: Journal of the Transportation Research Board*.

Hossain, M.J., Vitthaladevuni, P.K., Alouini, M.S., and Bhargava, V.K. (2003). Hierarchical modulation for multimedia and multicast transmission over fading channels. *Proceedings of the IEEE Vehicular Technology Conference*.

Hossain, M.J., Vitthaladevuni, P.K., Alouini, M.S., Bhargava, V.K., and Goldsmith, A.J. (2003). Adaptive hierarchical modulation for simultaneous voice and multi-class data transmission over fading channels. *Proceedings of the IEEE Workshop on Signal Processing Advances in Wireless Communications*.

Hourdakis, J., and Michalopoulos, P.G. (2002). Evaluation of ramp control effectiveness in two Twin Cities freeways. *Transportation Research Record: Journal of the Transportation Research Board*, 1811: 21–30.

Hourdakis, J., Michalopoulos, P.G.,

and Kottommanil, J. (in press). A practical procedure for calibrating traffic simulation models. *Transportation Research Record: Journal of the Transportation Research Board*.

Janardan, R., Arumugam, H., Veeraraghavan, H., McMillen, C., Stubbs, K., Masoud, O., and Papanikolopoulos, N. (2003). A real-time collision warning system for intersections. *Proceedings of the ITS America 2003 Annual Meeting*, CD-ROM.

Krizek, K., and Johnson, A. (2003). Mapping the terrain of information and communications technology (ICT) and household travel. *Proceedings of the 82nd Annual Meeting of the Transportation Research Board*.

Kuhne, R., and Michalopoulos, P.G. (in press). Continuum macroscopic traffic flow models. *Transportation Research Record: Journal of the Transportation Research Board*.

Levinson, D. (2002). *Financing Transportation Networks*. Northampton, Massachusetts: Edward Elgar Publishers.

Levinson, D. (2002). Identifying winners and losers in transportation. *Transportation Research Record: Journal of the*



David Levinson

Transportation Research Board.

Levinson, D. (2003). The value of advanced traveler information systems for route choice. *Transportation Research part C*, vol. 11, no. 1: 75–87.

Levinson, D., and Chang, E. (2003). A model for optimizing electronic toll collection systems. *Transportation Research part A*, vol. 37, no. 4: 293–314.

Levinson, D., Kanchi, S., and Gillen, D. (2002). Inter-technology effects in intelligent transportation systems. *Transportation Research Record: Journal of the Transportation Research Board* 1800: 1–5.

Levinson, D., and Sheikh, A. (2002). Traffic equilibration: The case of the Twin Cities ramp meter shut off. *Proceedings of the International Conference on Traffic and Transportation Studies*, 580–587.

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Maurin, B., Masoud, O., and Papanikolopoulos, N. (2002). Monitoring crowded traffic scenes. *Proceedings of the IEEE 5th International Conference on Intelligent Transportation Systems*.

Michalopoulos, P.G. (2002). Implementation of video detection in freeways. *Traffic Engineering and Control*, vol. 35, no. 12: 679–684.

Michalopoulos, P.G., and Hourdakis, J. (2002). Requirements and procedures for employing simulation in ITS Applications. *Proceedings of*

the ASCE 7th International Conference on Applications of Advanced Technology.

Michalopoulos, P.G., and Hourdakis, J. (2002). Towards the development of the next generation traffic management centers. *Proceedings of the 9th World Congress in Intelligent Transportation Systems*, CD-ROM.

Munnich, L., and Lehnhoff, J. (2003). Applying industry clusters to intelligent transportation systems: a framework for analysis. *Proceedings of the ITS America 2003 Annual Meeting*, CD-ROM.

Muthuswamy, S., and Levinson, D. (2003). Buying into the bypass: Allowing trucks to pay to use the ramp meter bypasses. *Journal of the Transportation Research Forum in Transportation Quarterly*, Winter 2003, vol. 57, no. 1: 81–92.

Rajamani, R. (2002). Adaptive cruise control systems. *IEEE Transactions on Vehicular Technology*, vol. 51, no. 5.

Rajamani, R. (2002). Radar health monitoring for highway vehicle applications. *Vehicle System Dynamics*, vol. 38, no. 1: 23–54.

Rajamani, R., Zhu C., and Alexander, L. (2003). Lateral control of a backward driven front-steering vehicle. *Control Engineering Practice*, vol. 11, no. 5.

Sergi, M., Newstrom, B., Gorjestani, A., Shankwitz, C., and Donath, M. (2003). Dynamic evaluation of high accuracy differential GPS. *Proceedings of the Institute of Navigation 2003 National Technical Meeting*, 581–592.

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and Zhou, C. (2002). Vector map compression: A clustering approach. *Proceedings of the 10th ACM International Symposium on Advances in Geographic Information Systems*.

Shekhar, S., Lu, C.T., Ravada, S., and Chawla, S. (2002). Optimizing join index based spatial-join-processing: A graph partitioning approach. *Transactions on Knowledge and Data Engineering*, vol. 14, no. 6.

Shekhar, S., Lu, C.T., and Zhang, P. (2003). A unified approach to spatial outlier detection. *Geo-Information: An International Journal on Advances of Computer Science for GIS*, vol. 7, no. 2. Kluwer Academic Publishers.



Shashi Shekhar

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Shekhar S., and Lu, Q. (2002). Evacuation planning algorithms: A capacity constrained routing approach. *Proceedings of the 23rd Army Science Conference*.

Smith, T.J., Hammond, C., and Wade, M. (2002). *Investigating the Effect on Driver Performance of Advanced Warning Flashers at*

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Sun, Y., Piyabongkam, D., Sezen, A., Nelson, B.J., and Rajamani, R. (2002). A high aspect ratio two-axis electrostatic microactuator with extended travel range. *Sensors and Actuators A: Physical*, vol. 102: 49–60.

Sun, Y., Piyabongkam, D., Sezen, A., Nelson, B.J., Rajamani R., Schoch R., and Potasek, D.P. (2002). A novel dual-axis electrostatic microactuation system for micromanipulation. *Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems*.

Veeraraghavan, H., Masoud, O., and Papanikolopoulos, N. (2002). Vision-based monitoring of intersections. *Proceedings of the IEEE 5th International Conference on Intelligent Transportation Systems*.

Vitthaladevuni, P.K., and Alouini, M.S. (2003). A recursive algorithm for the exact BER computation of generalized hierarchical QAM constellations. *IEEE Transactions on Information Theory*, vol. 49, no. 1: 297–307.

Wang, J., Agrawal, P., Alexander, L., and Rajamani, R. (2003). An experimental study with alternate measurement systems for estimation of tire-road friction coefficient. *Proceedings of the 2003 American Control Conference*.

Ward, N.J., Dye, L., and Block, E.E. (2003). *Antidepressants and Driving—A Literature Review and Commentary*, Department for Transport, London, United Kingdom.

Wright, S., Ward, N.J., and Cohn,

A.G. (2002). Enhanced presence in driving simulators using autonomous traffic with virtual personalities. *Presence*, vol. 11, no. 6: 578–590.

Wyrick, D. (2002). Benchmarking fleet management for Mn/DOT. *Proceedings of the 2002 National Conference of the American Society for Engineering Management*.

Yang, J.S. (2002). A case study of highway traffic flow model—model calibration and simulation. *Proceedings of the IEEE 5th International Conference on Control Applications and IEEE 5th International Symposium on Computer Aided Control Systems Design*.

Yang, J.S. (2003). Traffic simulation study based on calibrated traffic flow models. *Proceedings of the 3rd IASTED International Conference on Circuits, Signals, and Systems*.

Yang, L., Alouini, M.S., and Øien, G.E. (2003). Performance of buffered adaptive transmission. *Proceedings of the COST 273 Workshop on Broadband Wireless Local Access*.

Zhang, L., and Levinson, D. (2002). Estimation of demand response to ramp metering. *Proceedings of the International Conference on Traffic and Transportation Studies*, 674–681.

Zou, X., and Levinson, D. (2002). Evaluation of impacts of adaptive cruise control on mixed traffic flow. *Proceedings of the International Conference on Traffic and Transportation Studies*, 762–779.

Selected Presentations

Boer, E.R., and Ward, N.J. (2002, September). Perceptive criteria workshop. Driving Simulator Conference, Paris, France.

Burns, S. (2003, April). ILD Vehicle signature analysis. CTS 14th Annual Transportation Research Conference, St. Paul, Minnesota.

Cherkassky, V. (2002, August). Application of VC learning theory for signal and image demising. International Conference on Artificial Neural Networks, Madrid, Spain.

Cherkassky, V., and Ma, Y. (2002, August). Selection of meta-parameters for support vector regression. International Conference on Artificial Neural Networks, Madrid, Spain.

Davis, G. (2003, January). A vehicle/pedestrian collision model for neighborhood traffic control. 82nd Annual Meeting of the Transportation Research Board, Washington, D.C.

Davis, G. (2003, June). Bayesian networks and traffic accident reconstruction. 9th International Conference on Artificial Intelligence and Law, Edinburgh, Scotland.

Davis, G. (2002, July). Towards a unified approach to causal analysis in traffic safety using structural causal models. 15th International Symposium on Transportation and Traffic Theory, Adelaide, Australia.

Davis, G. (2002, September). Vehicular homicide and speed: Accounting for uncertainty in traffic accident reconstruction using Bayesian networks. 5th International

Conference on Forensic Statistics, Venice, Italy.

De Ridder, S. N., Elieff, C., Gershenson, C., and Pick, H.L. (2002, September–October).

Staying oriented while driving. 2002 Conference of the Human Factors and Ergonomic Society, Baltimore, Maryland.

Digham, F.F., and Alouini, M.S. (2003, April). Adaptive M-FSK transmission for power limited systems. CTS 14th Annual Transportation Research Conference, St. Paul, Minnesota.

Douma, F. (2003, May). Does higher speed mean fewer trips? Impact of telecommunications on residential travel. CTS 14th Annual Transportation Research Conference, St. Paul, Minnesota.

Douma, F. (2003, January). Stranded but connected? Case study of wireless ITS systems for emergency medical services in small town and rural environments. 82nd Annual Meeting of the Transportation Research Board, Washington, D.C.

Hendrix, C., and Durfee, W. (2003, March). Human motor performance while using a single DOF haptic interface. 11th Symposium on Haptic Interfaces for Virtual Environment and Teleoperator Systems, Los Angeles, California.

Horan, T. (2002, October). Wireless EMS in Minnesota. ITS Institute Advanced Transportation Technologies Seminar Series, University of Minnesota.

Horan, T. (2003, March). Rural Transportation and Technology Academic Seminar, University of Vermont.

Horan, T. (2003, January). Stranded but connected: Findings from wireless EMS case studies. 82nd Annual Meeting of the Transportation Research Board, Washington, D.C.

Kwon, T. (2003, January). Data service through internet access. 82nd Annual Meeting of the Transportation Research Board, Washington, D.C.

Levinson, D. (2002, November). Transportation network dynamics. Institute for Operations Research and the Management Services Conference, San Jose, California.

Levinson, D and Chen, W. (2003, January). Traffic management system performance. 82nd Annual Meeting of the Transportation Research Board, Washington, D.C.

Levinson, D and Huo, H. (2003, January). Effectiveness of VMS using empirical loop detector data. 82nd Annual Meeting of the Transportation Research Board, Washington, D.C.

Levinson, D., Parthasarathi, P., and Gillen, D. (2003, January). Insurance value of freeway service patrols. 82nd Annual Meeting of the Transportation Research Board, Washington, D.C.

Michalopoulos, P.G. (2002, September). Advances and needs in traffic flow modeling. FHWA workshop on next generation of models for traffic analysis, monitoring, and management, Tucson, Arizona.

Munnich, L. (2003, May). Exploring the connection between intelligent transportation systems and rural industrial clusters. ITS America 2003 Annual Meeting, Minneapolis, Minnesota.

Papanikolopoulos, N. (2003, May). Camera-based monitoring of urban intersections. CTS 14th Annual Transportation Research Conference, St. Paul, Minnesota.

Papanikolopoulos, N. (2003, May). Vision-based pedestrian tracking and motion recognition for homeland security. CTS 14th Annual Transportation Research Conference, St. Paul, Minnesota.

Pick, H.L. (2002, June). Age differences in drivers' spatial orientation. Regional meeting of "55 Alive" organization, St Paul, Minnesota.

Shankwitz, C. (2003, March). Bus rapid transit: lane assist systems for narrow lanes. ITS Minnesota Annual Meeting.

Shankwitz, C. (2003, March). DGPS and intelligent vehicles. Minnesota Surveyors' Conference.

Shekhar, S., Lu, C.T., and Zhang, P. (2002, November). Cube view: A system for traffic data visualization. 14th Annual IEEE International Conference on Tools with Artificial Intelligence, Washington, D.C.

Shekhar, S., Lu, C.T., Zhang, P., and Liu, R. (2002, November). Data mining for selective visualization of large spatial datasets. 14th Annual IEEE International Conference on Tools with Artificial Intelligence, Washington, D.C.

Stachowicz, M., Krishnamoorthy, D., and Sosonkina, M. (2003, February). Parallelization of fuzzy relational equations. International Conference on Artificial Intelligence and Applications, Innsbruck, Austria.

Smith, T.J. (2003, April). Reducing risk taking at passive railroad cross-

ings with active warnings. CTS 14th Annual Transportation Research Conference, St. Paul, Minnesota.

Stubbs, K., Arumugam, H., Masoud, O., McMillen, C., Veeraraghavan, H., Janardan, R., and Papanikolopoulos, N. P. (2003, May). A real-time collision warning system for intersections. ITS America 2003 Annual Meeting, Minneapolis, Minnesota.

Swaminathan, S., and Li, P. (2003, June). Traffic flow stability induced by arbitrary adaptive cruise control policies. 2003 American Control Conference, Denver, Colorado.

Vitthaladevuni, P.K., Hossain, M.J., Alouini, M.S., and Bhargava, V.K. (2003, April). Hierarchical constellations for multimedia transmission over fading channels. CTS 14th Annual Transportation Research Conference, St Paul, Minnesota.



Michael Wade and student

Wade, M.G., and Hammond, C. (2003, May). Traffic engineering issues. Minnesota Leadership Conference Driver Safety Program, Bloomington, Minnesota.

Wechsler, H., Duric Z., Li, F. and Cherkassky, V. (2002, August). Motion prediction using VC-gener-

alization bounds. International Conference on Pattern Recognition, Quebec City, Quebec.

Wilson, M. (2002, July). Simulating snowplow operations in northeastern Minnesota. Promodel Users Conference, Park City, Utah.

Wilson, M. (2003, April). Snowplow operations and resource management. CTS 14th Annual Transportation Research Conference, St. Paul, Minnesota.

Wilson, M. (2003, June). Snowplow operations and resource management. Federal Maintenance Decision Support System, Des Moines, Iowa.

Wyrick, D. (2002, October). Benchmarking fleet management. National Conference for the American Society for Engineering Management, Tampa, Fla.

Wyrick, D. (2003, April). Benchmarking fleet management benchmarking assessment (poster session). CTS 14th Annual Transportation Research Conference, St. Paul, Minnesota.

Yang, J.S. (2003, April). Traffic flow modeling on the Miller Hill Corridor. CTS 14th Annual Transportation Research Conference, St. Paul, Minnesota.

Yang, J.S. (2003, May). Traffic simulation study based on calibrated traffic flow models. International Conference on Circuits, Signals, and Systems, Cancun, Mexico.

Yerra, B. (2003, February). The emergence of hierarchy in transportation networks. 42nd Annual Meeting of the Western Regional Science Association, Rio Rico, Arizona.



Jiann-Shiou Yang

Zhang, L., and Levinson, D. (2003, January). Balancing efficiency and equity of ramp meters. 82nd Annual Meeting of the Transportation Research Board, Washington, D.C.

Zhang, L., and Levinson, D. (2003, January). Optimal freeway ramp control without origin-destination information. 82nd Annual Meeting of the Transportation Research Board, Washington, D.C.

Zou, X., and Levinson, D. (2003, January). Evaluation of adaptive cruise control in mixed traffic. 82nd Annual Meeting of the Transportation Research Board, Washington, D.C.

Zou, X., and Levinson, D. (2003, January). Predicting breakdown of traffic. 82nd Annual Meeting of the Transportation Research Board, Washington, D.C.