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**ARDESHIR (ARDE) FAGHRI**

**Professor**

**Department of Civil & Environmental Engineering**

**Director**

**Delaware Center for Transportation (DCT)**

**University of Delaware**

**Newark, DE 19716**

**Phone: (302) 831 – 1446**

**FAX: (302) 831 – 0674**

**E-mail: [Faghri@udel.edu](mailto:Faghri@udel.edu)**

**Areas of Teaching and Research**

Transportation systems engineering, computing methods in transportation, intelligent transportation systems, transportation in developing countries, geographic information and global positioning systems, applied probability theory

**Education**

- **Ph.D.**, Civil Engineering/Transportation, University of Virginia, Charlottesville, VA. (1987)
- **M.S.**, Civil Engineering/Transportation, University of Virginia, Charlottesville, VA. (1985)
- **M.S.**, Civil Engineering/Applied Mathematics, University of Washington, Seattle, WA. (1983)
- **B.S.C.E.** (Honors) Civil Engineering, University of Washington, Seattle, WA. Minor: Mathematics (1981)

## **Honors and Awards**

Best Paper Award, 7<sup>th</sup> International Conference on Computing, Communications and Control Technologies, CCCT (2009)

Special Merit Award, Dean of Engineering, University of Delaware (2004)

Excellence in Teaching Award, College of Engineering, University of Delaware (2004)

NASA/ASEE Faculty Fellowship Award, NASA–Goddard Space Flight Center (2001–2002)

National Science Foundation (NSF) Integrative Graduate Education & Research in Transportation Award (2000)

Special Merit Award, Dean of Engineering, University of Delaware (1999)

Eisenhower Transportation Faculty Research Award, United States Department of Transportation (1999)

American Railway Engineers Association Best Paper Award (1997)

American Society of Highway Engineers Service Appreciation Award (1996)

United Nations Development Program Award, for Conducting Research and Training in Transportation Engineering in Developing Countries (1996)

Excellence in Teaching Award, University of Delaware (1996)

Excellence in Academic Advising Award, University of Delaware (1995)

Who's who in Frontiers of Science and Technology (1993)

Institute of Transportation Engineers Best Paper Award (1987)

Institute of Transportation Engineers Best Paper Award (1986)

Institute of Transportation Engineers Best Paper Award (1985)

Undergraduate Academic Scholarship award (1976–1980)

Tau Beta Pi Engineering Honor Society (1977–present)

Chi Epsilon Civil Engineering Honor Society (1977–present)

**Professional Experience:**

Department of Civil & Environmental Engineering, University of Delaware

- **Professor (2002-present)**
- **Associate Chair (2001-2006)**
- **Director (2001–present)** Delaware Center for Transportation
- **Associate Professor (1996–2002)**
- **Interim Director (1995–1997)** UD Delaware Transportation Institute
- **Assistant Professor (1990–1996)**

Government & Private Sector

- **Senior Transportation Systems Analyst (1988–1990)**  
KLD Associates, Inc. Long Island, NY.
- **Senior Transportation Planning Engineer (1987-1988)**  
Virginia Department of Transportation, Central Office, Richmond, VA
- **Research Scientist Assistant (1984-1987)**  
Virginia Transportation Research Council, Charlottesville, VA

## Patents

Computer-Implemented System and Method for Simulating Vehicle, and Bicycle traffic  
Approved US Patent Number 60,950,788 (2005)

## Editorship

International Journal of Computer-Aided Civil and Infrastructure Engineering  
Guest Editor, "Application of Advanced Technologies in Transportation" (2009)

International Symposium on Uncertainty Modeling and Analysis, Local Organizing  
Committee IEEE Computer Society (2003)

International Journal of Computer-Aided Civil and Infrastructure Engineering, Guest Editor,  
"Applications of Advanced Computer and Communication Technologies in Transportation  
Planning and Control" (2001)

European Symposium on Artificial Intelligence Applications in Transportation Systems and  
Science Program Committee, Helsinki University of Technology (1999)

## Recent Refereed Publications

Rukowicz, S.; A. Faghri; R. Taromi, "*CORSIM Application of Alternative Fuels for Transit  
Busses*", Transport Chicago, (2009)

Faghri, A.; E. Lee; R Taromi, "*Applications of Integrated CPS/GIS Technologies to Intelligent  
Transportation Systems and Data collection for Freeway Operations*", 2<sup>nd</sup> International  
Symposium on Freeway and Tollway Operations (2009)

Taromi, R.; S.A. Zargari; A. Faghri; E. Lee, "*Optimizing Configuration of Urban Streets Using  
Genetic Algorithms*", 7<sup>th</sup> International Conference on Computing, Communications and  
Control Technologies; CCCT, pp 98-103 (2009)

Eshragh, S.; S.A. Zargari; A. Faghri; E. Lee, "*Bus Network Modeling Using Ant Algorithms*", 7<sup>th</sup>  
International Conference on Computing Communications and Control Technologies:  
CCCT, pp 75-79 (2009)

DuRoss, M.; R. Taromi; A. Faghri; S. Thompson-Graves, "*Spatial Allocation Effects of Forecast  
Land Uses on Statewide Mobile Source Emissions*", 2009 Transportation Planning/Land  
Use and Air Quality, pp 62-85 (2009)

Amanzholov, A.; A. Faghri; R. Taromi; E. Lee, "*Analysis of Off-Peak Traffic Signal  
Operations*", 12<sup>th</sup> International Federation of Automatic Control (IFAC) Symposium on  
Control in Transportation Systems (CTS'09), pp 538-543 University of Southern  
California (2009)

- Mallem, S.; A. Faghri; R. Taromi; T. DeLiberty, “*Utilization of GPS Travel Time and Delay Data for Optimal Routing*”, 12<sup>th</sup> International Federation of Automatic Control (IFAC) Symposium on Control in Transportation Systems (CTS’09), pp 562-568 University of Southern California (2009)
- Hamad, K.; E. Lee; M. Tabatabaei; A. Faghri, “*Applications of Hilbert-Huang Transforms in Travel Time Prediction*”, International Journal of Computer-Aided Civil and Infrastructure Engineering (2009)
- Faghri, A, “*Recent Advances in Software, Hardware, Mathematical Modeling and Mathematical Programming as Applied to Transportation and Traffic Engineering*”, International Journal of Computer-Aided Civil and Infrastructure Engineering (2009)
- Markowski, M.; A. Faghri, “*Microsimulation of Relaxed Pedestrian Movement*”, Journal of Transportation Research Record, National Research Council (2009)
- Bassan, S.; A. Polus; A. Faghri, “*Experimental Investigation of Spatial Breakdown Evolution on congested Freeways*”, Journal of Civil Engineering and Environmental Systems, Volume 24, #4, pp. 260-274 (2008)
- Bassan, S.; A. Polus; A. Faghri, “*Modeling of Freeway Breakdown Process with Log-Periodic Oscillations*”, Canadian Journal of Civil Engineering, #34, pp. 1577-1586 (2008)
- Capparuccini, D.; A. Faghri; R. Suarez; A. Polus, “*Fluctuation and Seasonality of Hourly Traffic and Accuracy of Design Hourly Volume Estimates*”, Journal of Transportation Research Record, National Research Council, #2049, pp. 63-70 (2008)
- Vlahos, E.; A. Faghri; P. Ranjitkar; A. Polus; D. LaCombe, “*Evaluating the Conversion of All-Way Stop Controlled Intersections into Roundabouts*”, Journal of Transportation Research Record, National Research Council, # 2078, pp. 80-89 (2008)
- Catherine, A.; A. Faghri, “*Application of Car-Sharing in Small Cities in the United States*”, Transportation Research Board, National Research Council (2008)
- Bassan, S.; A. Polus, A. Faghri, “*Time Dependent Analysis of Density Fluctuations and Breakdown Thresholds on congested Freeways*”, Journal of Transportation Research Record, National Research Council # 1965, pp. 40-47 (2008)

## Refereed Book Chapters

- Faghri, A. Intelligent Transportation Systems, in the *Yearbook of Science and Technology* McGraw-Hill Book Company, pp. 155-158 (2005)
- Faghri, A. Evaluation of the Design Consistency of Horizontal Alignments by Knowledge-Based Expert Systems, *Advances in Roadway Geometric Design*, Mainz Publications (2000)

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- Faghri, A. and S. Aneja, Analysis of Performance of Backpropagation ANNs with Different Training Parameters, In *Neural Networks in Transport Applications*, Ashgate Publishing Ltd. pp 57-84 (1998)
- Faghri, A. and J. Hua A Neural Network-based Traffic Control System for Isolated Intersections In *Artificial Neural Networks for Civil Engineers*, American Society of Civil Engineers (ASCE) Publications, Reston, VA, pp. 35–52 (1998)
- Faghri, A., D. Martinelli, and M. Demetsky, Neural Network Applications in Transportation Engineering, In *Artificial Neural Networks for Civil Engineers—Fundamentals and Applications*, American Society of Civil Engineers (ASCE) Publications, Reston, VA pp. 137–159 (1997)
- Faghri, A. and J. Hua, Seasonal Roadway Classification Using Neural Networks. *Applications of Artificial Intelligence Techniques in Transportation Engineering*, Engineering Foundation, pp. 363–381 (1992)
- Faghri, A, Representation and Control Strategy Selection Criteria for Building Expert Systems *Microcomputers in Civil Engineering*, No. 10, pp. 119–123, American Society of Civil Engineers (ASCE) (1992)
- Hua, J. and A. Faghri Traffic Sign Classification System Using Artificial Neural Networks *Applications of Advanced Technologies in Transportation Engineering*, pp. 244-250, American Society of Civil Engineers (ASCE) (1993)
- Faghri, A, TRANZ: A Prototype Expert System for Traffic Control in Highway Work Zones. *Applications of Advanced Technologies in Transportation Engineering*, American Society of Civil Engineers (ASCE), pp. 165–170 (1989)
- Demetsky, M. and A. Faghri, Evolving Expert Systems into Transportation Engineering Practice, *Applications of Advanced Technologies in Transportation Engineering*, American Society of Civil Engineers (ASCE), pp. 240–245 (1989)

## **Refereed Journal Articles**

80 articles in refereed archival journals

## **Refereed Conference Publications**

100 conference publications and presentations

## **Technical Reports**

120 technical reports

## **Grant Proposal Reviews**

National Science Foundation, Division of Civil & Mechanical Engineering, NSF, Arlington, Virginia

City University of New York Transportation Center, CUNY, New York, New York

University of Maryland, Department of Civil Engineering Transportation Center, College Park, Maryland

## **Grants**

About \$20 Million worth of research grants as PI & Co-PI from such sources as NSF, FHWA, DelDOT, FTA, PennDOT & NJDOT