

Ning (Vivian) Yang

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Education:

- **University of Maryland** College Park, MD Expected: 05/2009
Ph.D. Candidate, Transportation Engineering. GPA: 3.92/4.0
- **Tsinghua University** Beijing, China 07/2004
M.S., Civil Engineering GPA: 87/100
- **Tongji University** Shanghai, China 07/2001
B.S., Civil Engineering Minor: Computer Science GPA: 88/100

Relevant Course Work:

- Methodology: Stochastic Modeling, Simulation of Discrete-Event Systems, Linear Programming and Network Analysis, Integer Programming, Microeconomic Analysis, Econometrics
- Transportation: Regional Transportation Planning, Urban Transportation Planning, Quantitative Methods in Transportation Engineering, OR Models for Transportation and Logistics Networks, Airport Planning and Design, Traffic Flow Theory, Discrete Choice Model

Computer Skills:

- Language: C#, Visual C++, Visual Basic, Matlab, VBA
- Software: CORSIM, VISSIM, ArcGIS, ALOGIT, AutoCAD, SPSS, GAMS, CPLEX and many other software.

Research Projects:

- Development of a Multi-Objective Bi-level Approach to Highway Alignment Optimization 2008
 - Develop a model to find the best highway alignment option
 - Integrate an optimization model and a GIS (ArcView 3.3)
- Development of a Detailed Lock Simulation Model for Inland Waterway 2007-2008
 - Develop a microscopic lock operation simulation model with C#
- The application of Parallel Computing in Simulation-based Optimization 2007
 - Develop a Parallel Genetic Algorithm to solve a network-level project scheduling problem
 - Program with VC++6.0 and MPICH2.0
- Design of a Lane-based Work Zone Signal Merge Control System 2006-2007
 - Design a new merge control system for freeway work zone operation
 - Demonstrate the potential benefit of the newly-developed system based on VISSIM
- Highway Work Zone Optimization based on Simulation 2004-2006
 - Conduct research on the optimization of work zone management plan
 - develop work zone evaluation and decision support software with VB6.0
- Optimization of Urban Arterial Signal Timings based on Mesoscopic Simulation Models 2006
 - Team member• Apply a simultaneous perturbation stochastic approximation (SPSA) algorithm to optimize signal timing and coordination based on a mesoscopic simulation model.
- Solving a TSP Variant- Meter Reading Shortest Tour Problem 2005
 - Team member• Develop two heuristic approaches to solve a TSP variant

Professional Experience:

- Transportation Engineer, IBI Group May-August, 2008

Activities:

- Volunteer, International Student Orientation, 2008
 - Explain orientation sessions and respond to student questions
- Secretary, Intelligent Transport Systems (ITS) Student Chapter in UMCP 2004-2006
 - Arrange academic seminars and entertainment activities
- Sub-team Leader, Tsinghua University anti-SARS volunteer Organization 2003
 - Lead daily health condition survey, emergency response and service for 200 student residents in a high-rise dormitory
- Vice President of Graduate Student Council in Dept. of Civil Engineering 2001-2003
 - Lead the executive board to organize of student activities

Publications:

Journal Papers

- Ning Yang, Paul Schonfeld and Min Wook Kang. "A Hybrid Methodology for Freeway Work Zone Optimization with Time Constraints", *Public Works Management & Policy*, Vol.13, No.3, pp. 253-264, 2009
- Ning Yang, Gang-Len Chang and Kyeong-Pyo Kang. "A Simulation-based Study on A Lane-based Signal System For Merge Control at Freeway Work Zones", *Journal of Transportation Engineering* Vol. 135, No. 1, pp. 9-17, 2009
- Min Wook Kang, Paul Schonfeld, and Ning Yang. "Prescreening and Repairing Highway Alignment Optimization", *Computer-Aided Civil and Infrastructure Engineering*, Vol. 24, No. 2, pp. 109-119, 2009
- Shiaaulir Wang, Ning Yang, and Paul Shonfeld. "Simulation-based Maintenance Planning For Waterway Networks", Accepted for publication in *Transportation Research Record*, 2009

Conference Proceedings

- Ning Yang, Shiaaulir Wang, Paul Shonfeld. "Simulation-based Optimization Of Waterway Projects Using a Parallel Genetic Algorithm", TRB2008-2571, TRB 87th Annual Meeting, 2008
- Ning Yang, Yue Liu and Jie Yu. "Simulation Optimization of Urban Arterial Signals via SPSA", accepted by the 15th World Congress on Intelligent Transport Systems, 2008
- Jing Dong, Ning Yang, and Ming Chen. "Heuristic Approaches for a TSP Variant: The Automatic Meter Reading Shortest Tour Problem", *Extending The Horizons: Advances in Computing, Optimization, and Decision Technologies*, Springer Science+ Business Media, pp. 145-164, 2007

Reports

- Kang, M.W., Yang, N., Schonfeld, P., and Jha, M. "A Multiobjective Bilevel Approach to Highway Alignment Optimization: Phase I", NSF Report 0740958, January 2009.
- Schonfeld, P., Yang, N. and Tien, S. "Optimization of Work Zone Decisions through Simulation," TSC Report 2006-28 for the Maryland SHA, September 2006.
- Yang, N., Schonfeld, P. and Kang, M.W. "A Hybrid Methodology for Freeway Work Zone Optimization with Time Constraints," TSC Report 2006-23, Univ. of Maryland, College Park, August

2006.

- Yang, N., Wang, S. and Schonfeld, P., "Parallel Computing in Waterway Optimization," Report for IWR, May 2007.
- Wang, S., Yang, N. and Schonfeld P., "Improved Genetic Algorithms for Selecting and Scheduling Waterway Projects," Report for IWR, Univ. of Maryland, College Park, May 2007.
- Wang, S., Yang, N., Chen, C.C. and Schonfeld, P. "Status Report of Detailed Lock Model," Report for IWR, Univ. of Maryland, College Park, December 2007.

Presentations:

- Yang, Ning and Schonfeld, Paul, A Hybrid Methodology for Freeway Work Zone Optimization with Time Constraints, presented in INFORMS 2007, Nov.6, Seattle, Washington
- Frank Chien and Ning Yang, Analysis of Dynamic Price Bidding Mechanism (DPBM) for Time Slots Allocation in Attended Home Delivery Service, presented in INFORMS 2008, Oct.15, Washington, D.C.

Awards:

- I-95 Corridor Coalition Fellowship, 2009
- Graduate Student Fellowship of UMCP, 2004
- Guanghua Scholarship, Second-Class, Tsinghua University and Fund of Guanghua, 2002
- Outstanding Student Council Member in Tsinghua University, 2002
- Graduate with the Honor of All-excellent Student of Tongji University, 2001
- Tongji Scholarship for Outstanding Students. First Prize twice (Awarded to the top 3% of students), Second Prize twice, Additive Scholarship 3 times, 1996~2001