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EDUCATION

Ph.D. in Civil Engineering, University of Texas at El Paso 12/2008
Dissertation: *Expert system design guide for lower classification roads over high PI clays*
Research Advisor: Dr. Soheil Nazarian
MS in Civil Engineering, University of Texas at El Paso 07/2003
Thesis: *Expediting rigid pavement construction by using alternate pavement sections*
Research Advisor: Dr. Soheil Nazarian
B.E. major in Civil and Environmental Engineering,
minor in Applied Computer Science, Tongji University, Shanghai, China 07/1998

PROFESSIONAL LICENSE

Licensed Professional Engineer (P.E.), Texas, No. 106375.

TEACHING AND RESEARCH EXPERIENCE:

Adjunct Professor, Texas Southern University, Houston, Texas 09/2011 to present

- Taught courses in Civil Engineering Technology and Electronics Engineering Technology: Reinforced Concrete Design (CIVT 337), Soil Mechanics (CIVT 224), Civil Engineering Materials (CIVT 141), Water and Wastewater Engineering (CIVT 301) and Introduction to Structured Programming with C++ (ELET 130)

Postdoctoral Research Fellow, Texas Southern University, Houston, Texas

07/2011 to 08/2011

- Perform studies in Transportation Engineering field.
- Prepare technical report and research papers.

Research Associate, University of Texas at El Paso

01/2004 to 09/2008

Worked on the several TxDOT projects focused on improving pavement design and performance:

- Designed and built computer software ExSPRS (an Expert System program) using C++ to assist pavement engineers with flexible pavement design.
- Developed a pavement cracking prediction model caused by adverse action of expansive subsoils.
- Evaluated and modeled pavement structural performance using finite element analysis (FEA) software LS-DYNA.
- Conducted cost and benefit analysis to prioritize design alternatives.
- Performed extensive data analysis and correlation studies on laboratory soil testing results.
- Implemented fuzzy logic algorithm in “Data Fusion for Intelligent Nondestructive Evaluation of Flexible Pavement (DFINE)” program.

- Participated in program testing and debug for estimating impact of construction quality on life cycle performance of pavements
- Prepared project proposal, technical reports and software manual for user.

Research Technician, Texas A&M AgriLife Research Center 08/2002 to 07/2003

- Simulated surface water and groundwater interactions using groundwater flow modeling software such as GFLOW and MODFLOW.
- Performed water resources study for Rio Grande.
- Analyzed pumping effects on surface water flow.
- Carried out field hydrologic measurements including ponding tests, current meter flow measurements, ground and surface water sampling for laboratory water quality tests.
- Wrote project reports on seepage losses and groundwater modeling.
- Prepared proposals for future studies and coordinated project activities with all participants.

Research Assistant, University of Texas at El Paso 08/2000 to 07/2002

- Carried out feasibility study of using expert system approach to achieve objectives.
- Modified original work plan according to feasibility analysis.
- Identified key parameters that control PCC pavement performance by sensitivity study.
- Modeled pavement structural performance using FEA programs including KenPave, IlliSlab2 and ISLAB2000.
- Conducted interviews and discussions with key participants to gain experts' input.
- Prioritized engineering activities using critical path method (CPM) approach for schedule control.

Lecturer, Guangdong University of Technology, Guangdong, China 07/1998 to 07/2000

- Taught undergraduate courses: Hydraulics, Environmental Engineering, Water and Wastewater Engineering, Water Supply and Sewerage, Pump Station Design.
- Performed multi-story residential and commercial building water supply and sewerage design.
- Designed water tank for master-planned community with 12,000 populations.
- Designed complex fire sprinkler system for a 6-story commercial building.
- Developed computer optimization software for pressurized pipeline optimizations.

PUBLICATIONS AND PRESENTATIONS

- **Wanyan, Y.**, Abdallah, I., Nazarian, S. and Puppala, A.J. (2010) "An Expert System for Design of Low-volume Roads over Expansive Soils" Transportation Research Records: Journal of the Transportation Research Board, 2010
- **Wanyan, Y.**, Manosuthkij, T., Abdallah, I., Nazarian, S. and Puppala, A.J. (2008) "Expert System Design Guide for Lower Classification Roads over High PI Clays" Research Report: FHWA/TX-08/0-5430-2
- **Wanyan, Y.**, Portillo, E., Abdallah, I. and Nazarian S. (2008) "Expert System for Pavement Remediation Strategies (ExSPRS) User's Manual" Research Report: FHWA/TX-08/0-5430-P2
- Manosuthkij, T., Puppala, A.J., Nazarian, S. and **Wanyan, Y.** (2007) "Comparisons between Measured and Predicted Swell Strains using PVR and Suction Based Models" in *Proceedings, Sessions of Geo-Denver*, pp. 1-11
- Sheng, Z., Aristizabal, L.S. and **Wanyan, Y.** (2004) "Well Spacing and Its Impacts on Surface Water Flow in El Paso Lower Valley" in *Proceedings, World Environmental and Water Resources Conference*, ASCE, Salt Lake, Utah, June 27-July 1, 2004, 6p. CD-ROM.
- **Wanyan, Y.** and Sheng, Z. (2003) "Effects of Irrigation Pumping on Surface Water Flow in El Paso Lower Valley Area during Drought" in *Proceedings, American Water Resources Association Annual Conference*, San Diego, CA, November 3-5, CD-ROM [abstract].
- Comeau, D. Sheng, Z., **Wanyan, Y.** and Aristizabal, L.S. (2003) "Using GFLOW to Model Interaction between Surface Water and Ground Water: The Lower Valley of El Paso Case Study"

in Proceedings, New Mexico Symposium on Hydrologic Modeling, Socorro, NM, August 12: E-20 [abstract].

- Sheng, Z., **Wanyan, Y.**, Aristizabal, L. and Reddy, K. (2002) “Seepage Losses for the Rio Grande Project” TWRI Special Report 2002-047, June: <http://twri.tamu.edu/reports/2002/2002-047/sr2002-047.pdf>
- Melchor L.O., Weissmann, J., **Wanyan, Y.** and Nazarian, S. (2003) “A Study of Expediting Construction of Rigid Pavements in Urban Areas by Using Alternative Pavement Sections” Research Report: *TX-01/0-4188-3*
- **Wanyan, Y.** (1999) “Hydraulics Review Guidebook for Guangdong Province Self-Taught Examination” Guangdong Department of Education , Guangzhou, China