Yaqi ("Yachi") Wanyan, PhD, PE.

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:

Assistant Professor, Texas Southern University 09/2013 to present

- Teach Civil Engineering core courses: Civil Engineering Materials (CIVT 141), Soil Mechanics (CIVT 224), Water and Wastewater Engineering (CIVT 301), Fluid Mechanics (CIVT 332), Hydraulic Engineering (CIVT 333), Geometric Design of Highways (CIVT 335), Reinforced Concrete Design (CIVT 337) and Strength of Materials (CIVT 338).

Visiting Assistant Professor, Texas Southern University 09/2011 to 08/2013

- Taught Civil Engineering and Electronics Engineering Technology core courses.

Postdoctoral Research Fellow, Texas Southern University 07/2011 to 08/2011

- Performed studies in Transportation Engineering field.

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 fussy 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