

## SHORT RESUME: SUNIL K. SINHA

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### Narrative Statement

Dr. Sunil K. Sinha is an Associate Professor of Civil & Environmental Engineering and Myers-Lawson School of Construction. In this capacity, he is responsible for teaching undergraduate and graduate civil engineering courses, and for leading and managing an active research program in the civil infrastructure-related topics. His research, teaching, and consulting are in the areas of advanced construction, asset management, pattern recognition, sensor informatics, and buried infrastructure issues. He is also an Adjunct Professor of Systems Design Engineering at the University of Waterloo, Canada. Dr. Sinha has seven years of practical experience in the construction industry. Dr. Sinha's current research activities address problems in the areas of assessment technologies and decision-making methodologies for the rehabilitation of large-scale civil infrastructure systems, especially municipal water and wastewater infrastructure systems. Dr. Sinha is a recipient of prestigious NSF CAREER Award for research in the areas of Sustainable Water Infrastructure Management System (SWIMS). He has also been granted NSF International Research & Education in Engineering (IREE) Award to visit European and Australian research institutions for six months. Dr. Sinha has documented and disseminated the results and findings from his research work in over seventy publications in technical referred journals, technical conference proceedings, and technical reports.

### Professional Preparation

Birla Institute of Technology, India	Civil Engineering	BE	1986
University of Waterloo, Ontario, Canada	Civil Engineering	MASc.	1997
University of Waterloo, Ontario, Canada	Civil & Systems Engineering	Ph.D.	2000

### Appointments

Associate Professor of Civil & Environmental Engineering, Virginia Tech, 2007 – Present  
Assistant Professor of Civil & Environmental Engineering, Penn State University, 2001– 2007  
Post-doctoral Fellow, University of Waterloo, Canada, September 2000 – February 2001  
Research Assistant, University of Waterloo, Canada, September 1996 – August 2000  
Research Engineer, Liqui-Force Services Ltd., and the City of Waterloo, Canada, Sept. 1999 – Aug. 2000  
Project Engineer, Government of Bihar, World Bank Cell, India, June 1987 – August 1996  
Construction Engineer, PACS-MECON, Lagos, Nigeria, July 1986 – May 1987

### Synergistic Activities

1. American Society of Civil Engineers (ASCE), Member
2. American Society for Engineering Education (ASEE), Member
3. Society of Electrical and Electronic Engineers (IEEE), Member
4. North American Society for Trenchless Technology (NASTT), Member
5. American Society for Testing and Materials (ASTM), Member
6. Canadian Society for Civil Engineers (CSCE), Member
7. Project Management Institute (PMI), Member

### Awards and Accomplishments

- National Science Foundation (NSF) – CAREER Award (2006- 2011)
- Natural Sciences & Engineering Research Council (NSERC) of Canada - Post-Doctoral Fellowship (2001-2003)
- Natural Sciences & Engineering Research Council (NSERC) of Canada - Doctoral Postgraduate Scholarship (1999-2001)
- Natural Sciences & Engineering Research Council (NSERC) of Canada - Industrial Postgraduate Scholarship (1997-1999)
- Ontario Graduate Scholarship (OGS) - (1996-1997)

## Selected Publications

1. Jung, Y. J., and **Sinha, S. K.** (2007). 'Critical Analysis of Modern Trenchless Technology Methods for Urban Infrastructure,' *ASCE Journal of Infrastructure Systems*, vol. 13, no. 2, pp. 144-156.
2. **Sinha, S. K.**, and McKim, R. A. (2007). 'Probabilistic Based Integrated Pipeline Management System,' *Journal of the International Society of Trenchless Technology*, Elsevier Publication.
3. **Sinha, S. K.**, Thomas, R. H., and Kulka, J. H. (2007). 'Integrating Ethics into Engineering Design of Construction Process,' *ASCE Journal of Professional Issues in Engineering Education*, vol. 133, no. 4, pp. 291-299.
4. Ok, S. C., and **Sinha, S. K.** (2006). 'Estimating Construction Equipment Productivity: An Artificial Neural Network Based Approach,' *Journal of Construction Management & Economics*, Taylor & Francis,
5. Thomas, R. H., Riley, D. R., and **Sinha, S. K.** (2006). 'Fundamental Principles for Avoiding Congested Work Areas on Masonry Work – A Case Study,' *ASCE Journal of Practical Periodical on Structural Design and Construction*, vol. 11, no. 4, pp. 197-205.
6. Iyer, S, and **Sinha, S. K.** (2006). 'Segmentation of Pipe Images for Crack Detection in Buried Sewers,' *Computer-Aided Civil and Infrastructure Engineering*, Blackwell Publication, vol. 21, no. 6, pp. 395-410.
7. **Sinha, S. K.**, and Fieguth, P. W. (2006). 'Morphological Segmentation and Classification of Underground Pipe Images,' *Machine Vision and Applications*, Springer-Verlag Publication, vol. 17(1), pp. 21 – 31.
8. Lee, D., Pietrucha, M. T., and **Sinha, S. K.**, (2005). 'Application of Fuzzy Logic to Evaluate Driver Perception of Variable Message Signs,' *Journal of Transportation Research Record*, TRB, vol. 1937, pp. 96-104,
9. **Sinha, S. K.**, and Fieguth, P. W. (2005). 'Segmentation of Buried Concrete Pipe Images,' *Journal of Automation in Construction*, Elsevier Publication, vol. 15(1), pp. 47-57.
10. **Sinha, S. K.**, and Fieguth, P. W. (2005). 'Automated Identification of Crack Defects in Buried Concrete Pipe Images,' *Journal of Automation in Construction*, Elsevier Publication, vol. 15(1), pp. 58-72.
11. **Sinha, S. K.**, and Fieguth, P. W. (2005). 'Projection Neural Network Model for Classification of Pipe Defects,' *Journal of Automation in Construction*, Elsevier Publication, vol. 15(1), pp. 73-83.
12. Iyer, S., **Sinha, S. K.**, and Schokker, A. J., (2005). 'Ultrasonic Imaging of Post-Tensioned Bridges to Investigate Corrosion Status,' *Journal of Computer-Aided Civil & Infrastructure Engineering*, Blackwell Publication, vol. 20, no. 1, pp. 79-94.
13. **Sinha, S. K.**, Thomas, R. H., and Kulka, J. H. (2005). 'Integrating Ethics into Engineering Design of Construction Process,' *ASCE Annual Conference*, Portland, Oregon, Paper Session 1121.
14. **Sinha, S. K.**, and Karray, F. (2002). 'Classification of Underground Pipe Scanned Images Using Feature Extraction and Neuro-fuzzy Algorithms,' *IEEE Transactions on Neural Networks*, vol. 13(2), pp. 393-401.
15. **Sinha, S. K.**, and Pandey, M. (2002). 'Probabilistic Neural Network for Reliability Assessment of Oil and Gas Pipelines,' *J. of Computer-Aided Civil & Infra. Eng.*, Blackwell Publishers, vol. 17, no. 5, pp. 320-329.
16. **Sinha, S. K.**, and McKim, R. A., (2000). 'Artificial Neural Networks for Measuring Organizational Effectiveness,' *ASCE Journal of Computing in Civil Engineering*, vol. 14, no.1, pp. 9-14.
17. McKim, R. A., and **Sinha, S. K.**, (1999). 'Condition Assessment of Underground Sewer Pipes Using Digital Image Processing,' *Trenchless Technology Research - Official Journal of the International Society of Trenchless Technology*, Elsevier Science Publishers, vol. 14, no. 2, pp. 29-37.