

Civil Engineering, Software Development

Expertise Groundwater Flow, Numerical Methods

Education Ph.D. (Civil Engineering), 1985; M.S.C.E. (Civil Engineering), 1980
University of Minnesota
Ingénieur Géologue, 1976, University of Liège, Belgium

Professional Experience

	<i>Itasca Consulting Group, Inc., Minneapolis, Minnesota</i>
2010 – Present	<i>Principal</i>
1993 - Present	<i>Geotechnical Engineer</i>
1990 - 1991	<i>Project Engineer</i>
1986	<i>Consultant</i>
1984	<i>ACRI, Los Angeles, California, Consultant</i>
1982	<i>University of Minnesota, Department of Civil and Mineral Engineering Teaching Assistant</i>
1981	<i>University of Liège, Department of Geologie de l'ingénieur, Belgium Consultant</i>
1977 - 1981	<i>University of Minnesota, Department of Civil and Mineral Engineering Research Assistant</i>
1976 - 1977	<i>University of Liège, Department of Applied Mathematics, Belgium Research Assistant</i>

Project Experience

Code Development

Finite Difference — Development and implementation of: two-phase flow logic and pile structural element in FLAC; fluid flow and thermal modules in FLAC3D; and coupled fluid-thermo-mechanical logic, creep and viscoplastic constitutive models and artificial viscosity damping in FLAC and FLAC3D.

Analytic Element Method — Development of a computer code to model a regional aquifer using the analytic element method (LEGIA); code development related to front tracking, computation of travel time, modeling of flow in a permeable fissured media; and analytical derivation of linear and circular element to model groundwater flow.

Semi-Analytical Method — Development of a non-iterative semi-analytical method to solve a class of two-dimensional flow problems involving free surfaces (such as phreatic surfaces, interface between fresh and salt water, and seepage face; development of computer codes for the numerical and analytical solutions to problems of leakage from a pond.

Finite Element Method — Development and implementation of a finite element procedure to model fluid flow with free surfaces, using a fixed grid.