David B. Russell

ITASCA

Theoretical & Applied Mechanics, Software Development

Expertise

Engineering Software Development (C, C++, Fortran, FLAC, FLAC3D, UDEC, 3DEC, PFC, PFC3D)

Education

Ph.D. (Theoretical and Applied Mechanics), 2004, Cornell University

B.S. (Aerospace Engineering & Mechanics), 1992
University of Minnesota

Honors & Awards

Harriet Davis Fellowship, Cornell University, 2001

Cornell Fellowship, Cornell University, 1999-2000

Professional Experience

Itasca Consulting Group, Inc., Minneapolis, Minnesota

2010 – Present	*Principal*
2004 - Present	*Senior Software Engineer*
1999 - 2004	*Associate, Software*
1992-1999	*Software Engineer*
1987-1992	*Assistant Engineer*

Project Experience

Conception, development and implementation of a new computational fluid dynamics (CFD) method for 2D incompressible viscous fluid around moving geometries; experimentation to discover the wing-interaction forces generated by dragonflies; creation and maintenance of a laboratory Linux network at Cornell University.

Assistance in the development and source control of Itasca codes FLAC (Fast Lagrangian Analysis of Continua), FLAC3D (Fast Lagrangian Analysis of Continua in 3 Dimensions), UDEC (Universal Distinct Element Code), 3DEC (3-Dimensional Distinct Element Code), PFC2D (Particle Flow Code in 2 Dimensions), and PFC3D (Particle Flow Code in 3 Dimensions) and provision of support for said codes. Development and maintenance of a software library that included user-interface methods and common numeric needs in a platform-independent manner; development or assistance in the development of continuum methods for solid mechanics, discrete methods for solid mechanics and sharp discontinuity in continuum methods for fluid mechanics.