

Chad Burdyshaw

Education

Ph.D. Computational Engineering, University of Tennessee at Chattanooga, May 2006
MS. Computational Engineering, Mississippi State University, June 2001
BS. Physics, Central Washington University, June 1999
BS. Computer Science, Central Washington University, June 1999

Employment

Assistant Research Professor, Computational Simulation and Design Center, University of Tennessee at Chattanooga, 2006-Present
Research Associate, Computational Simulation and Design Center, University of Tennessee at Chattanooga, 2002-2006
Research Associate, Computational Simulation and Design Center, Mississippi State University, 2001-2002
Graduate Research Assistant, Computational Simulation and Design Center, Mississippi State University, 1999-2001
Software Test Engineer, Accelerations Software, Poulsbo WA, 1999
Research Assistant, Pacific Northwest National Laboratories, Richland WA, 1997

Honors & Activities

Magna Cum Laude graduate in Physics and Computer Science
First "Outstanding Computer Science Graduate" awarded by CWU
Associated Western Universities Research Fellowship
Member *Sigma Pi Sigma* Physics Honor Society
Society for Physics Students Chapter Officer
MSU External Research Advisory Committee Presenter
NSF Engineering Research Center Advisory Committee Presenter
MSU Engineering Research Center Graduate Student Council Officer

Research Activities

1999-present, Investigation into design methods applied to computational field simulations.
1999-present, Analysis of stochastic and deterministic optimization methods, and sensitivity analysis techniques.
1998-present, Algorithm analysis applied to characterization and optimization of serial and parallel algorithms.
1999-present, Analysis and implementation of mathematical methods for the solution of nonlinear partial differential equations and systems of linear equations, numerical integration, and domain discretization.

Publications

Kapadia, S., Anderson, W. K., and Burdyshaw, C., Channel Shape Design of Solid Oxide Fuel Cells, UTC-CECS-SimCenter-2009-01, June 2009.
Anderson, W.K., Karman, S.L., and Burdyshaw, C., Geometry Parameterization Method for Multidisciplinary Applications, AIAA Journal, Vol. 47, No. 6, June 2009.

Kapadia, S., Anderson, W.K., Elliott, L., Burdyslaw, C., Adjoint-Based Sensitivity Analysis and Error Correction Methods Applied to Solid Oxide Fuel Cells. (To be published in ASME Journal of Fuel Cell Science and Technology 2009)

W.K. Anderson, Steve L. Karman, C. Burdyslaw, Geometry Parameterization Using Control Grids, AIAA Paper 2008-6028.

Burdyslaw, C.E.; Anderson, W.K., Advances in Discrete Sensitivity Methods Applied to Uncertainty Analysis, Proceedings of NATO RTO-AVT-147 meeting on Computational Uncertainty in Vehicle Design. Athens, Greece. December 2007.

S. Kapadia , W.K. Anderson, L. Elliott, C. Burdyslaw, Adjoint method for solid-oxide fuel cell simulations, Journal of Power Sources, Vol. 166, 2007, pp. 376-385.

S. Kapadia, W. K. Anderson, L. Elliott and C. Burdyslaw, Adjoint Based Sensitivity Analysis And Error Correction Methods Applied To Solid Oxide Fuel Cells, Presented at ASME 5th International Fuel Cell Science, Engineering & Technology Conference, June 18 - 20, 2007, New York, FuelCell2007-25157.

C. Burdyslaw, Achieving Automatic Concurrency Between Computational Field Solvers and Adjoint Sensitivity Codes. Ph.D. Thesis, University of Tennessee at Chattanooga, 2006

C. Burdyslaw, W.K. Anderson, A General and Extensible Unstructured Mesh Adjoint Method. AIAA Journal of Aerospace, Computing, Information, and Communication. 2005.

C. Burdyslaw, Quasi 3-D Multi-Stage Turbomachinery Pre-Optimizer. Masters Thesis, Mississippi State University, 2001.