

Daniel W. Zaide

CONTACT INFORMATION	<p>Department of Mechanical Engineering, University of British Columbia 2054-6250 Applied Science Lane Vancouver, BC, V6T 1Z4 www.mech.ubc.ca</p> <p>Phone: (604) 358-6056 E-mail: dan.zaide@gmail.com website: www.danielzaide.com</p>
CITIZENSHIP	Canada
EDUCATION	<p>University of Michigan, Ann Arbor, Michigan, USA</p> <p>Ph.D., Aerospace Engineering and Scientific Computing, June 2012</p> <ul style="list-style-type: none">• Advisors: Professor Philip L. Roe and Professor Kenneth G. Powell• Dissertation: <i>Numerical Shockwave Anomalies</i>• Courses Include: High-Energy-Density Physics, Uncertainty Quantification <p>M.S., Applied Mathematics, April 2011</p> <ul style="list-style-type: none">• Courses Include: Numerical Methods for Scientific Computing I & II, Introduction to Partial Differential Equations, Linear Systems and Matrix Theory <p>M.S.E., Aerospace Engineering, April 2009</p> <ul style="list-style-type: none">• Courses Include: Viscous Flows, Compressible Flow, Computational Fluid Dynamics I & II, Molecular Gas Dynamics, Introduction to Turbulence <p>University of Toronto, Toronto, Ontario, Canada</p> <p>B.A.Sc. with Honours, Engineering Science, June 2007</p>
PROFESSIONAL DEVELOPMENT	<p>Instructional Skills Workshop, Certificate of Completion, December 2012</p> <p>Applications of Parallel Computers, Certificate of Completion, May 2013</p> <p>Foundations of Project Management I, Certificate of Completion, May 2013 20th AIAA</p>
AWARDS	<p>CFD Conference, 4th AIAA CFD Student Paper Competition, 2011</p> <ul style="list-style-type: none">• 1st Place, “Shock Capturing Anomalies and the Jump Conditions in One Dimension” <p>Natural Sciences and Engineering Research Council of Canada, 2010-2012</p> <ul style="list-style-type: none">• Postgraduate Doctoral Scholarship (PGS-D) <p>Department of Aerospace Engineering, University of Michigan, 2007</p> <ul style="list-style-type: none">• Mr. & Mrs. Oliphant Fellowship
RELEVANT EXPERIENCE	<p>Department of Mechanical Engineering, University of British Columbia</p> <p><i>Post-Doctoral Fellow</i> September 2012 - Present</p> <ul style="list-style-type: none">• Researching and developing algorithms and software in the Advanced Numerical Simulation Lab under the supervision of Dr. Carl Ollivier-Gooch for unstructured mesh adaptation in the simulation of semiconductor device fabrication, specifically local surface remeshing and surface insertion into pre-existing meshes.• Implemented new unstructured mesh algorithms into C++ framework for localized surface insertion into existing meshes, developing both software and algorithm test cases to ensure functionality and robustness. <p>Center for Radiative Shock Hydrodynamics, University of Michigan</p> <p><i>Graduate Student Research Assistant</i> September 2009 to June 2012</p> <ul style="list-style-type: none">• Collaborated with a large research team on numerical method development for the simulation and uncertainty quantification of large scale radiative shockwave experiments.• Developed new understanding of numerical shock structure in shock-capturing schemes.

Los Alamos National Lab, Los Alamos, New Mexico, USA

Graduate Student Research Assistant

May 2010 to August 2010

- Examined anomalous behavior in the numerical simulation of shockwaves and implemented implicit-explicit timestepping methods for radiation hydrodynamics under the supervision of Dr. Robert B. Lowrie.

Department of Aerospace Engineering, University of Michigan

Graduate Student Instructor

- AERO 325: Introduction to Aerodynamics (**Fall 2007, Winter 2008, Fall 2010, Winter 2011**), AERO 523: Computational Fluid Dynamics I (**Fall 2010**), AERO 520: Compressible Flow (**Fall 2011**)

SELECTED
CONTRIBUTIONS

Zaide, Daniel W. and Ollivier-Gooch, Carl F., **Inserting a Curve into a Mesh in Two Dimensions.** *22nd International Meshing Roundtable*, Oct 2013.

Zaide, Daniel W. and Roe, Philip L., **A Second-Order Finite Volume Method that Reduces Numerical Shockwave Anomalies in One Dimension.** *21st AIAA Computational Fluid Dynamics Conference*, June 2013

Roe, Philip L., and Zaide, Daniel W., **Removing Shock-capturing Anomalies.** *The 9th New Models and Hydrocodes for Shock Wave Processes Conference*, April 2012

Zaide, Daniel W. and Roe, Philip L., **Shock Capturing Anomalies and the Jump Conditions in One Dimension.** Poster. *53rd Annual Meeting of the APS Division of Plasma Physics*, November 2011

Zaide, Daniel W. and Roe, Philip L., **On Wall Heating, Slowly Moving Shocks, and Sub-cell Shock Position.** *International Conference on Numerical Methods For Multi-Material Fluid Flows*, September 2011

Zaide, Daniel W. and Lowrie, Robert B., **A Second-Order IMEX Method for Radiation Hydrodynamics.** *7th International Congress on Industrial and Applied Mathematics*, July 2011

Zaide, Daniel W. and Roe, Philip L., **Shock Capturing Anomalies and the Jump Conditions in One Dimension.** *20th AIAA Computational Fluid Dynamics Conference*, June 2011

Moran-Lopez, J. Tiberius, Zaide, Daniel W., Holloway, James P., and Schilling, Oleg., **Effects of Turbulence on Taylor-Sedov Blast Waves in Radially-Symmetric Geometries.** *62nd Annual Meeting of the APS Division of Fluid Dynamics*, November 2009.

PROFESSIONAL
SERVICE

Team Mentor - Simon Fraser University Unmanned Aerial Vehicle Team

Co-Faculty Advisor - University of British Columbia Human Powered Vehicle Team

TECHNICAL
SKILLS

Programming: C, C++, Python, Matlab

Word Processing Software: \TeX , \LaTeX , Microsoft Office, Open Office

Technical Software: Matlab, Mathematica, Octave, Paraview

Operating Systems: Microsoft Windows, Linux, OS X