Jón Tómas Grétarsson, Ph.D.

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EDUCATION

Stanford University, Stanford, CA – M.S. / Ph.D. 09/2006 – 03/2012
Computational and Mathematical Engineering [3.86]

Worcester Polytechnic Institute, Worcester, MA – B.S. 08/2002 – 05/2006
Computer Science [3.57], with a minor in Mathematics [4.00] High Distinction

EXPERIENCE

Stanford University, Stanford, CA 07/2008 – 03/2012
Research Assistant – Worked in Charbel Farhat's research lab, developing numerical methods related to embedded interface tracking and simulation. Worked on compressible flow and fluid-structure interface components of PhysBAM and AeroF code bases.

Stanford University, Stanford, CA 07/2007 – 06/2011
Research Assistant – Worked in Ron Fedkiw's research lab, developing numerical methods for the simulation of compressible and incompressible fluids and interfaces in PhysBAM.

Google Inc, Mountain View, CA 06/2008 – 09/2008
Designed and implemented software to replace the functionality of Mailman, which is compatible with the Google Groups framework and existing spam, abuse and delivery solutions.

Stanford University, Stanford, CA 01/2007 – 08/2008
Course Assistant – Ran problem sessions, graded and held office hours for Partial Differential Equations in Engineering, Math. Methods in Computer Vision, Robotics and Graphics, and Math. Methods for Fluids, Solids and Interfaces.

Google Inc, Mountain View, CA 06/2007 – 09/2007
Implemented an algorithm involving a one-pass log-storage algorithm for counting the frequency of strings in a large data set. Designed and Implemented an email bounce tracker.

Lincoln Laboratory at MIT, Cambridge, MA 04/2006 – 10/2006
Developed optimal scheduling algorithms for the SBSS (Space-Based Space Surveillance) project, involving discrete optimization of 10^3 variables over a continuous interval.

Lincoln Laboratory at MIT, Cambridge, MA 08/2005 – 11/2005
Co-op; Designed and implemented a space wargaming engine and optimization algorithms.

Intel Corporation, Hudson, MA 04/2005 – 09/2005
Developed XML-aware routing software to demo next-generation technology. Became local expert in IXP-C, an in-house language similar to C and made recommendations on the IXP-C compiler and good coding practice.

Callidus Consulting Inc, Worcester, MA 08/2003 – 10/2004
Co-founder – Created an independent technology consulting company providing web design and business technology solutions to corporate customers such as the American Antiquarian Society and Tatnuck Booksellers.

PUBLICATIONS

- **J Grétarsson**, and R Fedkiw. Fully conservative leak-proof treatment of thin solid structures immersed in compressible fluids. *Submitted*, 2012.
- **J Grétarsson**, N Kwatra, and R Fedkiw. Numerically Stable Fluid-Structure Interactions Between Compressible Flow and Solid Structures. Journal of Computational Physics 230, 3062–3084, 2011.
- M Lentine, **J Grétarsson**, and R Fedkiw. An Unconditionally Stable Fully Conservative Semi-Lagrangian Method. Journal of Computational Physics 230, 2857–2879, 2011.
- M Lentine, **J Grétarsson**, C Schoeder, A Robinson-Mosher, and R Fedkiw. Creature Control in a Fluid Environment. IEEE TVCG 17, 682–693, 2011.
- K Wang, **J Grétarsson**, A Mein and C Farhat. Numerical algorithms for tracking dynamic fluid-structure interfaces in embedded/immersed boundary methods. *AIAA-2011-3385, 6th AIAA Theoretical Fluid Mechanics Conference*, Honolulu, Hawaii, June 27-30 (2011).
- N Kwatra, **J Grétarsson** and R Fedkiw. Practical Animation of Compressible Flow for Shock Waves and Related Phenomena. ACM SIGGRAPH/Eurographics Symposium on Computer Animation, 207–215, 2010.
- N Kwatra, J Su, **J Grétarsson**, R Fedkiw. A Method for Avoiding the Acoustic Time-Step Restriction in Compressible Flow. Journal of Computational Physics 228, 4146–4161, 2009.
- A Robinson-Mosher, T Shinar, **J Grétarsson**, J Su, R Fedkiw. Two-way Coupling of Fluids to Rigid and Deformable Solids and Shells. SIGGRAPH 2008, ACM TOG 27, 46.1-46.9 (2008).
- **J Grétarsson**, F Li, M Li, A Samant, H Wu, M Claypool, and R Kinicki. Performance Analysis of the Intertwined Effects Between Network Layers for 802.11g Transmissions. *WMuNeP: Proceedings of the 1st ACM Workshop on Wireless Multimedia Networking and Performance Modeling*, pg. 123–130; October 2005.
- **J Grétarsson**, M Putnam, and M Shaw. Wargaming Modeling and Visualization. *Technical Report MXC-1082*. Worcester Polytechnic Institute; Fall 2005.
- **J Grétarsson**, A Lash, and M Forrest. Serving All Types of Learners. *Technical Report JMW-SLEW*. Worcester Polytechnic Institute; Spring 2006.

AFFILIATIONS

Association for Computing Machinery (ACM) 08/2004 – current
Current Member.

Society for Industrial and Applied Mathematics (SIAM) 10/2006 – current
Co-President of Stanford Chapter (2006-2008), Current Member.

Upsilon Pi Epsilon (UPE) 08/2005 – current
Former Vice President (WPI Chapter, 2005-2006), Current Member.

Community Advisor 09/2007 – 06/2009
Escondido Community Associate responsible for organizing several major events (1,000+ attendees).

Stanford Comedy Club 03/2007 – 03/2009
Co-President in charge of organizing and setting up a weekly comedy club.

ICME Student Representative 09/2006 – 10/2007
Student Representative for the Stanford ICME department.