

Duo Wang

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Education

- Sep.2007 - Present, Stony Brook University, Stony Brook, NY
Ph.D. student in Applied Math and Statistics department GPA: 3.96/4.0
Numerical Geometry, Algorithms, Fluid Dynamics, Probability and Statistics, Parallel Computing
- Sep.2003 - Jun.2007, Nanjing University, Nanjing, China
B.S. in Information and Computational Science GPA: 91/100
Analysis, Algebra, Geometry, Numerical Analysis, Information Theory, Programming

Work Experience

- Jun. 2010 - Sep. 2010 & Feb. 2012 - now: Internship with Dr. Rao V. Garimella at LANL
Design and implement the parallel extensions for Mesh Toolkit
Mesh Toolkit is an open source meshing software, but without parallel processing ability
My job was to design parallel data structure and write the parallel functions using C with MPI

Skills

- Programming Language: C/C++, Python, Matlab,
- Parallel programming: Pthread, OpenMP, MPI
- Version Control: Git, SVN, Mercurial
- Others: Shell Script, Perl, HTML, CGI, MySQL

Research Projects

- Sep.2008 - Present: Research Assistant with Prof. Xiangmin Jiao
High order geometric differential operators computation and integration over discrete meshes
Variational mesh optimization for surface and volume meshes
Numerical solution of geometric PDE
- Jan. 2009 - Present: In collaboration with Prof. James Glimm's group
Port the C/C++ mixed FronTier code to different computing platforms
Elastic problem in parachute simulation

Publications

- "Reconstructing High-Order Surfaces for Meshing". *Proceedings of 19th International Meshing Roundtable*, 2010, Part 3, 143-160
- "An Analysis and Comparison of Parametrization-Based Computation of Differential Quantities for Discrete Surfaces". *Computer Aided Geometric Design*, Volume 26, Issue 5, June 2009, Pages 510-527.
- "Simple and Effective Variational Optimization of Surface and Volume Triangulations". *Engineering With Computers*, 2008, Volume 27, Number 1, 81-94
- "A Numerical Method for the Simulation of Turbulent Mixing and its Basis in Mathematical Theory". *An international conference to honour Professor EF Toro University of Santiago de Compostela*, 4-8 July 2011, Spain
- "High-Order Numerical Integration over Discrete Surfaces". *International Council for Industrial and Applied Mathematics*. July 18-22, 2011, Vancouver, BC Canada. Longer version submitted to *SIAM Journal on Numerical Analysis*
- "Modeling and Discretization of Normal Pressure Induced by Membrane Energy".
submitted to *Journal of Computational Physics*