

Mark M. Mathis

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Objective

To never be bored by what I do.

Experience

Technical Staff Member, Los Alamos National Laboratory, 8/2005-present.

Graduate Research Assistant, Los Alamos National Laboratory, 9/2003-8/2005.

Graduate Research Assistant, Texas A&M University Department of Computer Science, 6/1999-9/2003.

Graduate Research Assistant, Los Alamos National Laboratory, 6/2002-8/2002.

Student Technician, Texas A&M University Meteorology Department, 9/1997-8/1999.

Undergraduate Research Assistant, Texas A&M University Department of Computer Science, 9/1998-5/1999.

Education

Ph.D. in Computer Science, Texas A&M University, in progress.

Thesis Advisor: Nancy Amato

M.S. in Computer Science, Texas A&M University, Dec. 2000.

MS Thesis: *A General Performance Model for Parallel Sweeps on Orthogonal Grids for Particle Transport Calculations*

Thesis Advisor: Nancy Amato

B.S. in Computer Engineering, Texas A&M University, May 1999.

Honors and Awards

Department of Energy High Performance Computer Science Graduate Fellowship

Texas A&M University Graduate Merit Fellowship

Texas A&M University Department of Computer Science Graduate Fellowship

Department of Education Graduate Fellowship

Upsilon Pi Epsilon Computer Science Honor Society

Tau Beta Pi Engineering Honor Society

Golden Key National Honor Society

Activities

Member of ACM, IEEE, and UPE.

Referee for Algorithmica, FGCS, IPDPS, ICPP, JEA, JPDC, and TPDS.

Journal Publications

Mark M. Mathis, Darren J. Kerbyson, Adolfo Hoisie, "A Performance Model of non-Deterministic Particle Transport on Large-Scale Systems", *Future Generation Computer Systems*, 22(3):324-335, Feb 2006.

Mark M. Mathis, Darren J. Kerbyson, "A General Performance Model of Structured and Unstructured Mesh Particle Transport Computations", *Journal of Supercomputing*, 34(2):181-199, Nov 2005.

Conference Proceedings

"Dynamic Performance Modeling of an Adaptive Mesh Application", Mark M. Mathis, Darren J. Kerbyson, In *Proc. Wkshp. on Sys. Mgmt. Tools for Large-Scale Par. Sys. (SMTPS), Int. Par. and Dist. Proc. Symp. (IPDPS)*, Apr 2006.

Mark M. Mathis, Darren J. Kerbyson, "Performance Modeling of Unstructured Mesh Particle Transport Computations", In *Proc. Wkshp. on Perf. Mod. Eval. and Opt. (PMEO-PDS), Int. Par. and Dist. Proc. Symp. (IPDPS)*, Santa Fe, NM, Apr 2004.

Mark M. Mathis, Darren J. Kerbyson, Adolfo Hoisie, "A Performance Model of non-Deterministic Particle Transport on Large-Scale Systems", In *Proc. Int. Conf. on Computational Science (ICCS)*, Melbourne, Australia, Jun 2003.

Mark M. Mathis, Nancy M. Amato, Marvin L. Adams, "A General Performance Model for Parallel Sweeps on Orthogonal Grids for Particle Transport Calculations", Proceedings of the 2000 International Conference on Supercomputing (ICS 2000), pp. 255-263, Santa Fe, NM, May 2000.

Nancy M. Amato, Jack Perdue, Andrea Pietracaprina, Geppino Pucci, Mark M. Mathis, "Predicting Performance on SMPs. A Case Study: The SGI Power Challenge", Proceedings of the 2000 International Parallel and Distributed Processing Symposium (IPDPS 2000), pp. 729-737, Cancun, Mexico, May 2000.

Technical Reports

Mark M. Mathis, Darren J. Kerbyson, "Dynamic Performance Modeling of an Adaptive Mesh Refinement Application", Technical Report, LA-UR-05-8672, Los Alamos National Laboratory, 2005.

Mark M. Mathis, Nancy M. Amato, Marvin L. Adams, "A General Performance Model for Parallel Sweeps on Orthogonal Grids for Particle Transport Calculations", Technical Report, TR00-004, Texas A&M University, Dec 1999.

Nancy M. Amato, Jack Perdue, Andrea Pietracaprina, Geppino Pucci, Mark M. Mathis, "Predicting Performance on SMPs. A Case Study: The SGI Power Challenge", Technical Report, TR99-020, Texas A&M University, Oct 1999.

Presentations

Mark M. Mathis, "Performance and Scalability of Particle Transport Applications", DOE High Speed Computing Conference (Salishan), Gleneden Beach, OR, April 2004.

Mark M. Mathis, "Performance Modeling of MCNP on Large-Scale Systems", Los Alamos Computer Science Institute (LACSI) Symposium, Santa Fe, NM, October 2002.