

SUMMARY **Background:** Broad experience in scientific computation, mathematics, and engineering.

Concentration: Numerical methods, modeling, and data analysis.

- EDUCATION**
- ◇ **PhD, Georgia Tech**, December, 2003
Mathematics. Luca Dieci, advisor. GPA: 3.88/4.0
Dissertation: *Numerical Methods for the Continuation of Invariant Tori*
 - ◇ **MS, University of Alabama in Huntsville**, May, 1999
Mechanical Engineering, minor in Mathematics. GPA: 4.0/4.0
Thesis: *An Intrinsic, Heterogeneous Model of Solid Propellant Combustion*
 - ◇ **BS, University of Alabama in Huntsville**, May, 1997
Mechanical Engineering, minor in Mathematics. GPA: 3.74/4.0
Honors program, *summa cum laude*

EMPLOYMENT HISTORY (Mar 2006 – present) **Postdoc**, Los Alamos National Laboratory

- ◇ Recent interest in parallel computation. Wrote C++/MPI code for efficient, parallel, out-of-core multiplication of large tensors.
- ◇ Collaborating on parser for Fortran 2003.
- ◇ Constructed novel metrics and measures for images. Wrote efficient algorithms and implemented them computationally.
- ◇ Applied analyses to large data sets. Found relevant correlations. Created visualization tools for results in Matlab.
- ◇ Possess active DOE “Q” clearance.

(Dec 2003 – Mar 2006) **Systems Analyst**, Dynetics, Inc.

- ◇ Produced variety of computational models and simulations—aerodynamics and control systems.
- ◇ Wrote trajectory optimization algorithms. Implemented them in Matlab and C++.
- ◇ Reduced evaluated, and analyzed foreign telemetry data. Developed computational models of foreign missiles based on data.
- ◇ Wrote algorithms for automated target recognition for radars.
- ◇ Developed search algorithms to improve mission planning software and optimize trajectories. These algorithms allowed company to provide mission planning software to client before a deadline.

Bryan Rasmussen

(Aug 1999 – Dec 2003) **Research/Teaching**, Georgia Tech Mathematics

- ◇ NSF-supported PhD research in numerical dynamical systems. Dissertation in invariant manifold approximation/continuation.
- ◇ Taught undergraduate mathematics: ordinary differential equations, calculus, linear algebra.

(May 1999 – Aug 1999) **Internship**, Sandia National Labs, Livermore, CA

- ◇ Performed computational materials science using practical, large finite-element codes.
- ◇ Investigated fundamental properties of FCC crystal deformation.
- ◇ Modeled O-ring aging.

(Nov 1996 – May 1999) **Research/Teaching**, UAH Propulsion Res. Ctr.

- ◇ Performed theoretical and experimental analysis of solid rocket combustion, including a four-month stay in Palaiseau, France at ONERA.
- ◇ Developed computational, thermodynamic models of composite combustion in C/MathCad.
- ◇ Taught graduate-level course in numerical solution of PDEs.

(Jan 1993 – Jan 1996) **Co-op**, NASA Marshall Space Flight Center

- ◇ Developed and tested ground software. Mostly C, with some scripting.
- ◇ Wrote low-level routines to represent many different data types in memory. Part of project to emulate telemetry streams from space station.
- ◇ Completed six terms: four quarters, two semesters.

QUALIFICATIONS

- ◇ **Extensive computational experience**—several programming languages, applications, operating systems, and research areas:
 - Highly proficient in Matlab.
 - Proficient in ANSI C/C++, \LaTeX . Using MPI for parallel applications.
 - Proficient in most modern operating systems: Unix/Linux, Mac, Win.
 - Experience with perl, shell scripting. Good with regular expressions.
 - Significant exposure to Mathematica, MathCad, Maple, and other scientific computing applications.
- ◇ **Teaching experience:**
 - Undergraduate mathematics (calculus, differential equations, linear algebra) at Georgia Tech, 1999-2002.
 - General and numerical linear algebra at Dynetics, Fall 2004.
 - Graduate course in numerical solution of PDEs at UAH in Spring, 1999.

AWARDS & HONORS

- ◇ **Scholarships:** Von Braun Memorial, 1995; UAH Presidential (formerly “Honors Scholarship”), 1991.
- ◇ **Honors Societies:** Tau Beta Pi (Engineering, 1995); Pi Tau Sigma (Mechanical Engineering, 1995); Phi Kappa Phi (General, 1999).