

Matthew K. Chamberlain

Current Address: 12300 Apache Ave., Apt. # 1610, Savannah, GA 31419

Permanent Address: 316 Myrtle Ave., Cheltenham, PA 19012

(404) 550-2482 • gte010x@mail.gatech.edu

- OBJECTIVE** Full-time position as a graduate mechanical engineer in the areas of complex systems design, computer aided design (CAD), modeling and simulation, optimization, or a related field.
- SUMMARY OF QUALIFICATIONS** Creative, flexible, and intellectually curious engineer. Seven years experience in all aspects of conceptual design and optimization research, one year's accumulated experience in several industries, hundreds of hours of accumulated experience in computer aided design. Strong leadership, presentation, and interpersonal skills.
- EDUCATION**
- Georgia Institute of Technology**, Atlanta, GA *August 2007*
Ph.D. in Mechanical Engineering
- Dissertation topic: Systematic redesign of complex engineering systems to meet strategic goals
 - Overall GPA: 4.0
- Georgia Institute of Technology**, Atlanta, GA *December 2002*
Master of Science in Mechanical Engineering
- Thesis: Multi-objective complex systems design taking into account technology forecasts and uncertainty
 - Overall GPA: 3.67
- Carnegie Mellon University**, Pittsburgh, PA *May 2000*
Bachelor of Science in Mechanical Engineering with Honors
- Senior Honors Research into a vision system for a land mine detecting robot
 - Overall GPA: 3.95
- EXPERIENCE**
- Georgia Institute of Technology**, Atlanta and Savannah, GA *August 2000 to present*
Systems Realization Laboratory
Graduate Research Assistant and Laboratory Manager
- Developed methods to support conceptual design of complex systems and product families leveraging existing methods such as design of experiments (DOE), Monte Carlo simulation, and genetic algorithms
 - Research resulted in multiple grants for further work and has been applied successfully to examples including the design of high-speed civil transport aircraft, electric motors, engines, and refrigerators
 - Presentation of research findings in both academic settings and at professional conferences
 - As Co-Manager of Atlanta lab, organized and led research meetings for 30-person group, recruited and mentored new graduate students, oversaw expansion of laboratory, and planned and executed both social activities and volunteer work
 - As Manager of Savannah lab, designed and led selection and acquisition of \$125,000 in lab facilities
- NASA Langley Research Center**, Hampton, VA *September – December 2002*
Visiting Researcher
- Developed improvements to a multi-level, multi-disciplinary optimization method in order to increase performance, generate better results, and prepare it for commercialization
- Bechtel Bettis Atomic Power Labs**, West Mifflin, PA *May – August 2000*
Associate Engineer
- Utilized ProEngineer to create assemblies to support high-priority project
 - Performed ASME code calculations and engineered a program for pressure testing small vessels under internal pressure with an inert gas
- IBM Printing Systems Company**, Endicott, NY *June – August 1998 and May – August 1999*
Engineering Intern
- Managed a project that analyzed failures of printer parts and led to a reduction in service and repair costs over long product lifecycles
 - Led a team of engineers and manufacturing personnel that planned and implemented a program to upgrade an existing product line in order to make it more robust
 - Developed a flexible database to track the features and maintenance history of a line of customized products, allowing engineers to quickly diagnose problems and solutions for each unique machine

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SKILLS

- Software: CATIA, ProEngineer (Pro/E), ProManufacture, Modelcenter, ANSYS, AutoCad, JMP, Crystal Ball, Matlab, Mathcad, and Microsoft Office
- Modeling and Simulation: Dymola, ACSYNT, POST, CONSIZ, FLOPS
- Programming Languages: Matlab, C++, C, Visual Basic, Fortan, HTML
- Engineer in Training certification in the Commonwealth of Pennsylvania (2000)
- Security clearances: Department of Energy "Q" secret security clearance (2000), NASA security clearance (2002)

HONORS

- National Science Foundation Graduate Research Fellowship (2002)
- Sam Nunn Security Fellowship (2005)
- Full Scholarship, Georgia Institute of Technology G.W. Woodruff School of Mechanical Engineering (2000-2007)
- Georgia Institute of Technology President's Fellowship (2000-2002)
- ASME IDETC Student Design Essay Contest Winner (2001 and 2003)
- Carnegie Mellon University and College of Engineering Honors
- Carnegie Mellon University Dean's List for all semesters
- Carnegie Mellon University Service Learning Award (1998)
- Member, Tau Beta Pi honor society
- Member, Pi Tau Sigma honor society
- Member, Mortar Board honor society
- Member, Carnegie Mellon University Chapter President, and National Student Representative to the board of directors of the National Society of Collegiate Scholars honor society

PUBLICATIONS

- **Chamberlain, M. K.**, Williams, C. B., Mistree, F., 2004, "Strategic Design: Leveraging Market Forecasts and Emerging Technologies in Engineering Design Applications," The 10th AIAA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, August 30th – September 1st, Albany, NY, AIAA-2004-4652.
- Panchal, J., **Chamberlain, M. K.**, Rosen, D. W., Allen, J.K., and Mistree, F., 2002, "A Service Based Architecture for Information and Asset Utilization in Distributed Product Realization," The 9th AIAA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, September 4-6, Atlanta, GA, AIAA-2002-5480.
- Seepersad, C. C., Cowan, F. S., **Chamberlain, M. K.**, and Mistree, F., "Strategic Design: Leveraging and Innovation for a Changing Marketplace," Computer-Based Design: Engineering Design Conference 2002, T. M. M. Shahin, ed., King's College London, UK.
- **Chamberlain, M. K.**, Williams, C. B., Cowan, F. S., Mistree, F., 2001, "Orchestrating Learning in a Graduate Engineering Design Course," The 13th International Conference on Design Theory and Methodology, ASME, September 9-12, Pittsburgh, PA, DETC2001/DTM-2037.

PROFESSIONAL SOCIETIES

- American Society of Mechanical Engineers (ASME)
 - Student member since 1996
 - Carnegie Mellon University chapter President (1999-2000)
 - Carnegie Mellon University chapter Treasurer (1998-1999)
- American Institute of Aeronautics and Astronautics (AIAA) student member since 2001

INTERESTS & ACTIVITIES

- Georgia Tech Savannah Colloquium Committee organizer
- Interests: Softball, ultimate, soccer, biking, hiking, travel, history, video games, photography
- Volunteer Work: Habitat for Humanity, Atlanta Community Food Bank, Kaboom (playground construction)