Michael Andrew Park

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Education

- **Massachusetts Institute of Technology**, Cambridge, MA.
  Ph.D., Aeronautics and Astronautics, expected graduation: 2008, GPA 4.66 of 5.00.
- **NASA Langley / George Washington University**, Hampton, VA.
  Joint Institute for the Advancement of Flight Sciences
  M.S., Aeronautical Engineering, August 2000, GPA 3.28 of 4.00.
- **University of Southern California**, Los Angeles, CA.
  B.S., Aerospace Engineering, May 1998, GPA 3.48 of 4.00.

Research interests

Computational Fluid Dynamics (CFD) flow and adjoint solver development for analysis, solution adaptation, and design; anisotropic grid adaptation mechanics; parallel computing; software development processes.

Skills

C, FORTRAN 95, MATLAB, Ruby, sh, csh, AutoConf, AutoMake, HTML, LaTeX.

Work experience

- **Research Scientist**, NASA Langley Computational Modeling and Simulation Branch; August 2000–present. Implemented a three-dimensional output (adjoint) based error estimation and adaptation scheme in FUN3D[1]. Developed a parallel, anisotropic grid adaptation library called from FUN3D (includes dynamic partition load balancing). The library is written in C, developed test-first, and contains a direct link to CAD geometry. Developed automated build and test procedure for FUN3D. Implemented Message Passing Interface (MPI) communication in FUN3D. Contributed to FUnit (FORTRAN 95 unit testing framework) Developement.
- **GWU Research Assistant**, Langley Multidisciplinary Optimization Branch; September 1998–August 2000. Applied the ADIFOR (Automatic Differentiation in FORTRAN) tool to CFL3D, a FORTRAN, structured grid, thin layer Navier-Stokes (N-S) CFD code to compute aircraft stability and control derivatives.
- **Co-op Flight Test Engineer**, NASA Dryden Flight Research Center Aerodynamics, Propulsion, and Controls Branches; September 1995–August 1997. Improved angle of attack and side slip determination during departures for F-18 HARV (High Alpha Research Vehicle) fight test data. Supported the Linear Aerospike SR-71 Experiment (LASRE) with supersonic wind tunnel testing and computational potential flow solutions of possible test configurations for stability and control data. Programmed a graphical modern control law design tool in MATLAB. Used the Hyper-X hypersonic free flyer as a control law design example and explored alternative trajectories for booster and free flyer separation studies.

Scholarships & Awards

Second Place, Team Leader, AIAA Graduate Team Aircraft Design, April 1997

Assistantship, George Washington University, full tuition and stipend, August 1998

Second Place, AIAA Undergraduate Regional Technical Paper Presentation, April 1997

Deans' Scholarship; Tau Beta Pi, Engineering Honor Society; Sigma Gamma Tau, Aerospace Honor Society; University of Southern California

Activities

USC Varsity Sailing Team 1993–1998; Volunteer Varsity Sailing Coach, Hampton University 2000–2001; Private Pilots License

References & Publications

Available upon request.

[1] `http://fun3d.larc.nasa.gov`, an unstructured CFD flow and adjoint solver capable of analysis and design of turbulent perfect and reacting gas flows with the gas models of LAURA and VULCAN.