GEORGE F. SWITZER

Aerospace Engineer • High Performance Computing Specialist

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PROFESSIONAL SUMMARY

Aerospace engineer with over three decades of experience advancing applied research in high performance computing (HPC), computational fluid dynamics (CFD), and scientific software development for national aerospace and atmospheric science projects. Broad experience enabling efficient large-scale simulations, technical training, automation, and innovative data post-processing at NASA Langley Research Center. Broad technical background supporting multifaceted research operations, published and recognized for contributions in computational modeling and atmospheric sciences. Federal term appointment concluded early due to budget policy changes affecting NASA positions, now available for immediate contribution to senior technical initiatives.

TECHNICAL SKILLS

Programming Languages: Python, Fortran, Shell Scripting
HPC & Simulation: FUN3D, MPI, Linux/Unix Systems, Supercomputing Environments
Visualization & Tools: PyTecplot, TecPlot, Large-Scale Data Analysis
Areas of Expertise: CFD Simulation, Mathematical Modeling, Data Analysis, Radar Systems, Scientific Computing
Languages: English (native), Spanish (B1 proficiency)

PROFESSIONAL EXPERIENCE

HIGH PERFORMANCE COMPUTING FACILITATOR

NASA Langley Research Center, Hampton, VA • 40 hours/week • 03/2021–09/2025

- Serve as HPC facilitator for research directorate, providing consulting, training, and future technology awareness in computational sciences and large-scale simulation
- Coordinate, develop, and deliver both agency-wide and center-specific HPC and AI/ML training, including monthly meetings with internal and external speakers
- Conduct low-speed CFD analysis for the Boeing X-66 truss-braced wing design; generate and process data for interagency collaboration and presentations
- Create and deploy Python/PyTecplot automation for post-processing FUN3D results, optimizing data workflows for research teams and industry partners
- Develop new Python approaches to accelerate satellite data analysis, achieving high computational efficiency and transferability to additional projects
- Coordinate Google AI/ML technical training and received NASA Silver Group Achievement Award (2024) as a member of the Summer of AI Team

RADAR ENGINEER

Analytical Mechanics Associates (Contractor to NASA), Hampton, VA • 40 hours/week • 01/2016–03/2021

- Member of NASA High Ice Water Content (HIWC) team; applied and enhanced TASS Large Eddy Simulation (LES) models for radar and atmospheric research
- Automated and visualized large datasets with Python, improving and modifying HPC codebases for efficiency and reduced resource requirements
- Principal Investigator for NAS supercomputing project "LES Modeling for High Ice Water Content"
- Documented data sets and delivered results for industry sensor projects
- Improved model performance and maintained production post-processing tools for research and partner organizations

SENIOR/SUPPORT SCIENTIST, COMPUTER SCIENTIST

Various Organizations supporting NASA Langley • 40 hours/week • 1993–2015

- Developed, maintained, and modernized scientific computing environments, model codes, and data analysis tools in support of flight system, turbulence/wake, and radar sensor studies
- Managed deliverables of data sets for certification of turbulence detection and wake prediction systems for aviation safety
- Provided support for NTSB accident investigations (American Airlines 587, US Air 1016)
- Developed and automated empirical models based on TASS model data for wake vortex and atmospheric simulations
- Mentored students and staff in applied modeling and software use for research purposes

VOLUNTEER EXPERIENCE

INTERNATIONAL SPORTS FEDERATION OFFICIAL

International Shooting Sport Federation (ISSF) • Volunteer • 2023–Present

- Certified A-level international judge qualified to officiate at Olympic Games, World Championships, World Cup, and regional championship competitions
- Officiated at major international competitions including World Cup events, Junior Pan American Games, and Pan American Shooting Championships
- Demonstrate expertise in rules interpretation, precision scoring, and high-stakes competition management under international protocols
- Apply analytical and decision-making skills in fast-paced, multicultural environments requiring accuracy and impartiality

EDUCATION

Master of Science, Aerospace Engineering

Virginia Polytechnic Institute & State University, Blacksburg, VA • 1987

Thesis: Patch Grid Solutions of the 2-D Thin-Layer Navier Stokes Equations

Bachelor of Science, Aeronautical Engineering (Cum Laude)

California Polytechnic State University, San Luis Obispo, CA • 1985

JOB-RELATED TRAINING

- Python for Scientists & Engineers (2022)
- Argonne Training for Program for Extreme Scale Computing (2022)
- Communicating with Impact (2022)
- Deep Reinforced Machine Learning (2018)
- Large Scale Visualization with ParaView (2017)
- Guide to Project Management (2001)

HONORS AND AWARDS

- NASA Silver Group Achievement Award – Summer of AI Team (2024)
- NASA Group Achievement Award – HIWC Radar Evaluation Team (2019)
- NASA Group Achievement Award – CEV Aeroscience Project Team (2009)
- AS&M Special Achievement Award (2009)
- NASA Group Achievement Award – American Airlines Flight 587 Accident Investigation Team (2004)
- NASA Group Achievement Award – AVOSS Project (2000)
- Honorary Superior Accomplishment Award (1988)

PROFESSIONAL AFFILIATIONS

- American Institute of Aeronautics and Astronautics (AIAA) - Senior Member
- Tau Beta Pi National Engineering Honor Society - Lifetime Member

References and publications available upon request.