

MICHAEL J. SMITH

Huntsville, Alabama

updated 09 February 2021

SUMMARY

Executing two-front engagement with mathematics:

- Classroom instruction to undergraduate students at the local university.
- Collaborative participation on problem-solving teams that support decision makers.

CIVILIAN EDUCATION

Doctor of Philosophy, Statistics

Florida State University, Tallahassee, FL

August 2003

Dissertation: Bayesian Sensor Fusion: A Framework for Using Multi-Modal Sensors to Estimate Target Locations & Identities in a Battlefield Scene (Srivastava)

Master of Science, Operations Research

Georgia Institute of Technology, Atlanta, GA

June 1995

Thesis: Ranking and Selection: Open Sequential Procedures for Bernoulli Populations (Goldman)

Bachelor of Science, Mathematics

Davidson College, Davidson, NC

May 1984

PROFESSIONAL HIGHLIGHTS

Operations Research Analyst

Quantum Research International, Inc.

February 2019 - present

- Part-time support to U.S. Army Program Executive Office for Missiles and Space
 - Maintain Excel-based linear integer program that constitutes a data-driven framework to help the Assistant Program Executive Office - International optimally balance workforce to workload

Applied Mathematician

Man-Machine Systems Assessment

November 2017 - present

- Support to Army Test & Evaluation Command's Operational Test Agency
 - Assessment of the Ballistic Missile Defense System
 - Duty at the Missile Defense Agency, Redstone Arsenal

Lecturer in Mathematics

University of Alabama in Huntsville

January 2017 - present

- Part-time faculty member in the Department of Mathematical Sciences
 - MA330 Foundations of Mathematics
 - MA385 Introduction to Probability & Statistics
 - MA487 Introduction to Mathematical Statistics

Consulting Statistician to the Missile Defense Agency

Senior Associate, MCR Federal

January 2017 - October 2017

- Special projects for the Director of Cost Analytics and Parametric Estimating

Consulting Mathematician

Zero Point Frontiers Corporation, Huntsville

November 2015 - September 2016

- Contributed first-principles application of mathematics in support of aerospace engineers working in the emerging commercial space market.

Adjunct Professor of Mathematics

Florida SouthWestern State College

August 2013 - May 2017

- Online instructor guiding students through an introductory course in probability & statistics with content provided by Pearson via MyLabsPlus.

Service Contractor Supporting the Missile Defense Agency

Senior Associate, MCR Federal

January 2014 - October 2015

- Senior Operations Research Analyst in the Directorate of Cost Estimating and Analysis.
- Assigned as cost estimator supporting both the Director of Advanced Technology and the Director of Test.
- Executed Monte Carlo sampling and subsequent distribution fitting to provide Government cost leads with a basis for including cost-risk analyses in program estimates.

Department of the Army Civilian

Operations Research Analyst, Headquarters Army Materiel Command

July 2012 - January 2014

- Assigned to Cost Team, Integration & Cost Division, ACofS Resource Management (G-8).
- Reviewed cost benefit analyses (CBAs) in support of AMC's Program Objectives Memorandum (POM).
- Supported AMC scrutiny of Army programs as part of the weapon system review (WSR) process.
- Managed the Cost Team effort to review economic analyses prepared by subordinate Depots and Arsenals for proposed Capital Investment Program projects.

Active Duty Officer, United States Army

Assistant Professor of Mathematics, U.S. Military Academy, West Point, NY

July 2010 - May 2012

- Taught sophomore-level integral calculus, introduction to differential equations, and introduction to probability & statistics.
- Supervised consulting effort to improve the Army's scheduling of officers' training courses. As compared to actual officer flow during 2010, the proposed methodology would have yielded an 88% reduction in unmet demand (measured in man-years) among deploying units.

Strategic Analyst, U.S. Pacific Command, Camp Smith, HI

October 2007 - June 2010

- Contributed to Studies & Analyses Division's development of quantitative methodology for USPACOM planners to prioritize capability gaps as part of the Command's integrated priority list (IPL) development.
- Planned and executed statistically designed experiments in support of Joint Innovation & Experimentation Division's participation in USPACOM large-scale training exercises. These included Terminal Fury and Talisman Saber initiatives sponsored by the Command's Science & Technology Cell.
- Served as Acting Chief of Strategic Assessments Division, U.S. Pacific Command. Charged with quantifying the efficacy of security cooperation engagements with partner nations in the Asia-Pacific region.

COMPUTING SKILLS

- High degree of competence with:
 - The \LaTeX environment for mathematical typesetting
 - Microsoft Excel spreadsheet and other Office applications
- Functional competency with:
 - Statistical software package R
 - Computer algebra system *Mathematica*
- Some experience with:
 - Statistical software packages Minitab, S-Plus, SPSS, and Statistica
 - Programming in MATLAB, Python, Visual Basic, FORTRAN, and Pascal

PUBLICATIONS

- “Confidence Levels for Flood Control Risk Using Additional Data” (with T. Hromadka and R. Whitley), 2009, *Journal of Stochastic Environmental Research and Risk Assessment* (in review).
- “Generous Statistical Tests” (with T. Hromadka, R. Whitley, S. Horton, and J. Lindquist), 2009, *Journal of Stochastic Environmental Research and Risk Assessment*, Volume 23, pages 9-12.
- “Power and Sample Size in a Logistic Regression Design Context,” 2008, 76th Military Operations Research Society (MORS) Symposium (submitted).
- “The Log-Pearson III Distribution in Hydrology” (with R. Whitley and T. Hromadka), 2007, *Environmental Sciences and Environmental Computing*, Volume III, Chapter 6, 13 pages.
- “A Model Based Approach to Statistical, Multi-Modal Sensor Fusion” (with A. Srivastava), 2003, *Statistical Computing* (submitted).

MEMBERSHIPS

Institute of Mathematical Statistics
American Mathematical Society
Association of the United States Army
American Legion Post 13, Tallahassee, FL

HONORS

Best Student Colloquium, Department of Statistics, FSU 2003
Best Student Colloquium, Department of Statistics, FSU 2002
Best First-Year Student in Theoretical Statistics, FSU 2001
Best First-Year Student in Applied Statistics, FSU 2001
Outstanding Master’s Student, School of Industrial & Systems Engineering, Ga Tech 1995

INTERESTS

Barbecue, bluegrass music, 5 most famous constants: $e^{i\pi} + 1 = 0$.