

DAVE ZACK

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EDUCATION

Johns Hopkins University Whiting School of Engineering, Baltimore, MD

Masters of Science, Applied and Computational Mathematics (in progress, part time); GPA: 4.0

Extracurricular activities: Bayesian Statistics Grader, Monte Carlo Methods Grader (May 2020 – May 2021)

University of Michigan, Ann Arbor, MI

Bachelor of Science in Engineering, Major: Aerospace Engineering; Minor: Mathematics (April 2011); GPA: 3.02

Extracurricular activities: Honors Applied Calculus II study group leader (Fall 2008); member of Phi Gamma Delta

MIT Professional Education, January – April 2022

Professional Certification, Applied Data Science Program

Relevant Skills: Data analysis and visualization, machine learning, deep learning, recommendation systems

EXPERIENCE

Johns Hopkins University Applied Physics Laboratory (JHUAPL), Laurel, MD

Combat System Engineer/Analyst, July 2016 – Present

Raytheon On-site Representative, March 2018 – December 2018

Led multiple “end-to-end analysis” projects for complex Naval defensive systems with teams ranging from two to four people and each lasting six months to one year. The projects involve generating results from a combat system simulation, analyzing data using MATLAB/Python/Excel, and presenting a high-level summary to US Navy Officers and detailed technical results to subject matter experts within the government. Represented JHUAPL on-site at Raytheon Integrated Defense Systems for high priority pre-flight-test-analysis of a multi-billion-dollar program involving a Monte Carlo simulation to understand the range of outcomes of the test prior to flight. Created a unique and concise data visualization script in MATLAB that was used to generate a summary of results that were presented to a US Navy Captain. Utilized advanced statistical techniques, such as Design of Experiments, to analyze the statistical impact of certain input variables on desired measures of effectiveness. Led defensive portion of a cross-sector effort that explored optimizing a limited volume using various combinations of defensive assets. Received a special achievement award for providing support to a time-critical study. Currently specialize in large parameter exploratory studies addressing far-future needs of the US Navy, including technological investment, asset allocation, general resourcing, as well as other requirements.

Schafer Corporation, Arlington, VA

Defense Advanced Research Projects Agency (DARPA) Technical SETA, February 2014 – July 2016

Supported the DARPA Hypersonic Air-breathing Weapon Concept (HAWC) Program as part of the ten-person, cross organization (DARPA, US Air Force, NASA) technical team responsible for program management and technical review of all key elements of the program. Participated in key technical and milestone reviews that addressed hypersonic systems, weapon effectiveness, and program management status. Created briefings that were presented to the Deputy Assistant Secretary of the Air Force, DARPA director, and various other high-level government officials. Created multiple responses to Program Objective Memoranda, one of which was selected for funding and became the Advanced Full Range Engine program. Received multiple performance-based bonuses for providing outstanding support to the program.

Missile Defense Agency (MDA), Huntsville, AL

General Engineer/Career Development Rotational Program, September 2012 – February 2014

Selected to participate in the highly competitive Career Development Rotational Program. As part of the Terminal High Altitude Area Defense (THAAD) Modeling, Simulation, and Analysis group, received and analyzed high-fidelity, hardware-in-the-loop THAAD simulation results and provided summaries of performance. In order to both increase efficiency and reduce the risk of human error, wrote a series of macros in Visual Basic for Applications to automate the analysis process. Assisted in the financial planning of large scale (order of \$100 million) flight tests in the Directorate of Test Targets. Created automated spreadsheet that greatly increased the efficiency of “what-if” drills.

Pacific Controls, Inc., Somerset, NJ

General Engineer, October 2011 – August 2012

Analyzed client building energy consumption and demand performance using in-house cloud-based software program. Designed graphical dashboards to portray building information to clients in a clear, concise and aesthetically appealing manner.

INTERESTS A NJ native, DC transplant; avid sports fan of Liverpool FC, University of Michigan, and other major professional sports; enjoy exercising, playing video games and golf, attending live sporting events, and trying new restaurants with my wife