

MATTHEW J. DEUTSCH

Twin Cities, Minnesota

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Consistent record of success in leading and influencing teams to tackle challenging problems. Curiosity, creativity, and a visionary spirit drive me to be an agent of change and produce novel solutions. I embrace the Air Force's core values of integrity first, service before self, and excellence in all we do because I believe they are a solid foundation for elevated performance. Seven years of military service: project management and process improvement roles provided a balanced blend of technical, leadership, and executive experiences. Versatile asset to any team. Available 18 December 2019.

- Product Design
- 3D Printing
- Statistical Analysis
- MATLAB
- System Design, Analysis and Control
- Design of Experiments
- Project Management
- Website Design

EXPERIENCE:

MEDTRONIC

June 2019 – Present

Released Product Engineer, Cardiac Rhythm and Heart Failure Therapy Delivery Systems

- Developed Monte-Carlo simulation to predict conformance to relevant standards of a design change to the SelectSure lead; provided critical information to influence VP-level decision on the project
- Conducted released product investigations; assessed catheter issues and recommended responses
- Completed critical feature identification for polyurethane used extensively in implanted devices

UNITED STATES AIR FORCE

December 2011 – Present

Assistant Professor of Engineering Mechanics

- Created 17 original practice problems to support the development of an in-house textbook
- Developed exercises to cultivate MATLAB coding skills in mechanical engineering majors
- Designed and 3D printed an electric motor for classroom demonstrations
- Led a team of instructors as course director for thermodynamics – developed novel learning experiences, assignment structures, and examinations to improve student outcomes
- Authored a conference paper on information literacy for American Society of Engineering Educators
- Managed the budget and travel authorizations, totaling about \$446K and 50 + trips annually
 - Eliminated 60 man-hours of oversight annually
 - Received highest possible ratings during 2 of 2 annual audits

Detonation Research Scientist

- Designed a modular 3D printed detonation tube with water cooling and integrated optical access
- Secured \$70K in funding for detonation wave propagation research at the academy
- Wrote over 1,500 lines of code in MATLAB to support post-processing of FTIR data
- Established Fourier transform infrared (FTIR) spectroscopy capability

Graduate Student at the Air Force Institute of Technology

- Designed and built optical probes to modify a small internal combustion engine (ICE) for research
- Developed new measurement system resulting in 40% improvement in signal and \$18K cost savings
- Wrote over 500 lines of code in MATLAB to support FTIR data post-processing
- Published a thesis on FTIR analysis of gas temperature in a small ICE

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Lead Munitions Test Engineer

- Led 7 test programs, planned and executed 30 missions in a 32-month period
- Diagnosed a malfunction on a Bofors Cannon in the field, saving more than 100 man hours and days of test delays – saved customer tens of thousands of dollars!
- Developed novel test procedures to cut test time by 50% on \$315K F-35 ammunition tests
- Re-vitalized automated damage assessment capability saving \$40K + in capital investment
- Enrolled in extra training on Design of Experiments methodology and implemented techniques learned there to prove a new \$140K fragment impact testing capability for Eglin Air Force Base
- Developed a Monte Carlo simulation in Microsoft Excel to reduce the number of tests needed to report results with sufficient confidence

Munitions Test Engineer

- Designed targets for live-fire test events
- Conducted live-fire tests of the JASSM and JASSM-ER, paved way for 2018 Syrian missile strike
- Managed and inventoried equipment worth millions of dollars

ZERO ZONE REFRIGERATION

June 2011 – December 2011

Manufacturing Engineer

- Designed forklift attachments to reduce manpower required to move product through the plant
- Championed \$10K overhaul of tool management system to boost productivity and accountability
- Negotiated with a supplier to reduce wire inventory by more than 90% and automatically restock spools where they were used on the manufacturing floor when supply ran low
- Created value stream map for the refrigeration unit manufacturing process
- Managed acquisition of new equipment
- Spearheaded 5S workplace organization projects
- Worked with employees across the full breadth and depth of the company to identify areas in which lean principles could improve productivity

VOLUNTEER WORK

Engineers Without Borders, USA

- Founder and first president of the Emerald Coast Professional Chapter in Florida
- Established a leadership team and processes to ensure the chapter was self-sustaining
- Developed strong ties with regional EWB-USA leadership
- Built membership up from nothing to a network of over 30 professionals
- Laid the groundwork for the chapter's first community partnership

Uganda Micro Power Project

- Installed 8 solar panels in a rural trading center
- Wired 48 homes, 2 clinics and 1 school for electric lighting

EDUCATION:

AIR FORCE INSTITUTE OF TECHNOLOGY
M.S. Aeronautical Engineering

Wright-Patterson AFB, OH

March 2016

UNIVERSITY OF SAINT THOMAS
B.S. Mechanical Engineering

Saint Paul, MN

May 2011