

# DANIEL SIMON JR.

Electrical Engineer | Systems Thinker | Technical Leader

## PROFESSIONAL PROFILE

Systems engineer with a unique integration of philosophy, science, and technology who transforms complex requirements into sustainable technical solutions. Specialized in Test Program Set (TPS) development for defense avionics, with proven expertise spanning the complete product lifecycle from vision to production. Known for deep systems thinking that bridges user requirements, hardware architecture, software implementation, and long-term sustainability—ensuring test systems remain maintainable and upgradeable throughout decades of platform evolution.

Combines hands-on electrical engineering expertise with theoretical depth, applying first-principles thinking to solve mission-critical challenges in automated test equipment design, avionics validation, and diagnostic system architecture. Passionate about mentoring the next generation of engineers and fostering STEM excellence in youth.

## CORE COMPETENCIES

- **Systems Engineering & Lifecycle Management:** Vision-to-production thinking spanning requirements definition, architecture design, implementation, integration, verification, and sustainment
- **Test Program Set (TPS) Development:** Complete design and implementation of hardware/software test systems for F-16 and F-35 avionics LRUs, from Interface Devices to diagnostic algorithms
- **Automated Test Equipment (ATE):** Expert-level proficiency with NI TestStand, LabVIEW, and LabWindows/CVI; experience with TI IMPACT, Teradyne iFlex/Eagle, and PXI-based systems
- **Hardware Design & Signal Integrity:** Circuit-level design expertise for data acquisition, instrumentation, control, and power systems; PCB layout with Altium Designer and Mentor Graphics
- **Diagnostic & Fault Isolation Logic:** Architecting test sequences that mirror expert troubleshooting workflows, enabling technicians to efficiently identify root causes under operational constraints
- **Cross-Functional Leadership:** Orchestrating hardware, software, manufacturing, quality, and program management teams through formal configuration management and enterprise processes
- **DoD Security Clearance:** Active Secret clearance

## TECHNICAL PROFICIENCIES

**Test & Automation:** NI TestStand, NI LabVIEW, NI LabWindows/CVI (ANSI C), TI IMPACT/TL1/VLCT, Teradyne iFlex/Eagle

**Design Tools:** Altium Designer, NI Multisim, Mentor Graphics Design Capture and PCB Layout

**Instrumentation:** Oscilloscopes, Function Generators, Sourcemeters, Power Supplies, DAQ Systems, PXI Modules, Signal Analyzers

**Protocols & Interfaces:** GPIB, Ethernet, RS-232, Digital/Analog/Mixed-Signal IC Testing

## PROFESSIONAL EXPERIENCE

**Senior Test Engineer – Test Procedure Set System Design, Development, Product Support & Sustainability**

*Lockheed Martin Corporation, Grand Prairie, Texas | March 2021 – Present*

- Architect and deliver complete Test Program Set solutions spanning hardware Interface Devices, test software, and technical documentation—applying systems thinking from initial requirements analysis through production deployment and field sustainment
- Lead cross-functional teams through formal enterprise engineering processes, coordinating hardware design, software development, manufacturing integration, quality assurance, and configuration management to ensure TPS systems meet rigorous defense standards
- Design sophisticated fault isolation algorithms and diagnostic workflows that enable field technicians to troubleshoot complex avionics failures efficiently, reducing mean time to repair and enhancing operational readiness
- Engineer for decades-long sustainability by creating modular, upgradeable architectures that accommodate platform evolution, component obsolescence, and emerging test requirements without complete system redesigns
- Manage complete technical data packages including block diagrams, schematics, bills of materials, test procedures, operator instructions, and verification/validation documentation

### **Senior Test Program Set Engineer**

*BAE Systems Inc., Dallas, Texas | July 2020 – March 2021*

- Developed advanced TPS solutions for F-16 and F-35 Line Replaceable Units (LRUs), creating Integrated Test Adapters (ITAs) for both portable flight-line testers and rack-based automatic test stations (LMSTAR)
- Collaborated directly with customers to define technical requirements, provide engineering inputs for formal reviews, and deliver technical presentations on test methodologies and system capabilities
- Engineered test software using NI TestStand and LabWindows/CVI, implementing complex measurement sequences and real-time control algorithms for avionics verification

### **Test Program Set Engineer II**

*BAE Systems Inc., Dallas, Texas | July 2016 – June 2020*

- Designed and documented TPS hardware and software for assigned F-16/F-35 Units Under Test, ensuring compatibility with semi-automatic flight-line testers and sophisticated backshop automatic test stations
- Developed comprehensive test procedures that balance thoroughness with operational efficiency, enabling technicians to perform accurate diagnostics under time-constrained field conditions

### **Battery ChemID Engineering Technician III (Contract)**

*Texas Instruments Inc., Dallas, Texas | February 2016 – July 2017*

- Architected custom test fixtures and experimental setups for battery cell electrical characterization, supporting Chemistry Electronic Identification (ChemID) algorithm development
- Applied mathematical modeling and data analysis using MathCad to identify electronic twins in battery populations, accelerating time-from-design-to-production
- Managed Arbin Instruments battery test systems, verifying data integrity and troubleshooting automated measurement sequences

### **Senior Software Engineer II (Contract)**

*Raytheon Inc., Dallas, Texas | March 2015 – January 2016*

- Documented architecture and design for Automated Test Set software, creating technical specifications that served as blueprints for implementation and maintenance

- Implemented and integrated test control methods in NI LabWindows/CVI and TestStand for military subcontractor avionics modules
- Completed comprehensive training in Systems Engineering principles including requirements development, functional analysis, architecture design, integration/verification/validation (IV&V), and technical risk management

## Test/Product Engineer

*Texas Instruments Inc., Dallas, Texas | December 2003 – March 2015*

- Pioneered NI TestStand and LabVIEW PXI-based test systems for characterizing and qualifying mixed-signal power and control ICs, enabling data-driven decisions before release-to-production
- Developed comprehensive Product Characterization and Qualification Plans aligned with AEC-Q100 automotive standards, managing package qualification, process qualification, burn-in, ESD testing, and latch-up verification
- Designed specialized test apertures and bench setups for ESD testing (HBM, CDM, MM models) and latch-up characterization, ensuring robust semiconductor reliability
- Operated and programmed multiple ATE platforms (TI IMPACT, TL1, VLCT, Teradyne iFlex/Eagle), troubleshooting complex failures to component level using signal analyzers and bench instrumentation

## EDUCATION & TRAINING

**Bachelor of Science in Electrical Engineering** | University of Texas at Dallas, Richardson, Texas | 2012

*Senior Design Project:* RF-based system to prevent friendly-fire incidents (3rd Place, Best Project)

**Associate of Science in Mathematics** | Richland College, Dallas, Texas | 2008

## MILITARY SERVICE & LEADERSHIP

**United States Army & Texas National Guard** | 1997 – 2000

- Maintained, troubleshooted, and repaired electrical systems and RF transceivers to component level, developing foundational expertise in systematic fault diagnosis
- Performed preventive maintenance and conducted fault analysis on mission-critical electronic systems under field conditions
- **Recognition:** Received Army Commendation Medal for proficiency in maintenance of electrical equipment

## PROFESSIONAL CERTIFICATIONS

- National Instruments TestStand I & II Certification
- National Instruments LabWindows/CVI I & II Certification
- National Instruments LabVIEW I & II Certification
- Altium Designer PCB Layout Certification

## COMMUNITY ENGAGEMENT & MENTORSHIP

Dedicated STEM mentor since 2012, inspiring young people through mathematics, science, and engineering tutoring. Passionate about being the mentor to others that I needed at age 14. Guided

multiple students through multi-year mentorship relationships, helping them navigate not only academic challenges but also life decisions and personal development.

**Guiding Philosophy:** "Knowledge is Power" (Francis Bacon) and "Everything was invented by individuals no smarter than you" (Steve Jobs)—emphasizing that education and determination enable anyone to contribute meaningfully to human knowledge and progress.

**Aspiration:** Working toward becoming the first in my family to earn a Ph.D., demonstrating that intellectual achievement is possible regardless of background.