LUIS E. ALVARADO

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SUMMARY OF QUALIFICATIONS

Highly disciplined and solutions-based professional with over 40 years of Systems Engineering and Management experience seeking to combine proven electrical engineering and computer science expertise with organizational and team-building talents. Mathematically adroit and highly skilled at generating and testing proprietary control programs and novel algorithms. Excellent problem solving and multitasking skills. Readily assume technical leadership and accountability for successful completion of complex projects. Possess outstanding oral and written communication skills and the ability to quickly establish rapport with staff members at all levels.

CORE COMPETENCIES:

- Management
- Systems Test Engineering
- Control Systems
- Data Analysis
- IV & V
- System Engineering
- Physics / Aerodynamics
- GPS Nav and Guidance
- Team Building
- Proposal Writing
- Air and Ground Drones
- Satellite Data Processing
- Agile Development
- Modeling & Simulation
- Real Time Systems

Hold Secret Security Clearance
Articulate fluency in English and Spanish

PROFESSIONAL EXPERIENCE

SR. SYSTEMS ENGINEER **2021 - 2025**
JSL, CORVID and GVI **White Sands Missile Range, New Mexico**

Systems Engineer supporting the development, testing and operations of the Navy Desert Ship at WSMR. Currently responsible for data analysis, MATLAB scripts, test plans, customer power point presentations, preparation of system under test documentation and development of mission scenarios. Serves as an SME for LLS-1 software and system interfaces including the Aegis Fire Control System (FCS), Missile Communications Test Set (MCTS), Missile Simulator Unit (MSU), and Monitor Control Unit (MCU) as well as remote operation systems network (ROSN), test support network (TSN), data distribution interfaces and automatic data processing systems.

PRINCIPAL SYSTEMS ENGINEER **2015 - 2021**
RAYTHEON MISSILE SYSTEMS **Tucson, Arizona**

Principal Systems Engineer supported the Integrated-Flight-Simulation (IFS) pre-flight performance analysis of 38 Ground Confidence Tests (GCT) and 55 Operational Tests (OT) of the StormBreaker Guided Bomb. IV&V of the IFS StormBreaker simulation program using GCT and OT recorded telemetry data. Used MATLAB to accomplish performance analysis and the IFS IV and V process. Upgraded IFS models as required using C++ and Linux. Led the Maritime IFS and SIP BOEs. Developed plan of attacks for major tasks. Green Belt, Scrum Master, Agile Dev Ops Development.

SENIOR SYSTEMS ENGINEER **2010 - 2015**
ADVANTEDGE TECHNOLOGY **White Sands Missile Range, New Mexico**

Senior Systems Engineer supporting the development, testing and operations of the Navy Desert Ship at WSMR. The Desert Ship provides a launching/radar tracking/simulation infrastructure to test US Navy missiles. Responsible for the definition of system architecture, development of test plans, configuration management, software integration, missile simulation, mission planning, system and mission data analysis (MATLAB), trade studies, risk analysis, customer power point presentations, schedules, and system and system under test documentation.

COSULTANT **2010 – 2011**
ICE CORPORATION **White Sands Missile Range, New Mexico**

Provide consultation services in the fields of navigation, modeling and control systems.

SENIOR SYSTEMS ENGINEER **2008 - 2010**
RHINO & ICE CORPORATIONS **White Sands Missile Range, New Mexico**

- Senior Systems Engineer accountable for testing and certification and IV&V of Target Control System; manage development of path-planning algorithms, software systems and testing, and validation procedures; direct, monitor, and assist programming; assist writing and verify accuracy of documentation.
- Function as principal Control Engineer developing the Ground Target Vehicle Control System; utilize analysis and mathematical models (MATLAB/Simulink) to predict and measure outcome; ensure compliance with performance and safety requirements in all aspects of program design features.
- Consult with engineering staff to evaluate interface between hardware and software; develop specifications and performance requirements; author papers for new project valued at $3M+.

MANAGER / PRINCIPAL CONTROL ENGINEER / SYSTEMS ENGINEER **1985 - 2008**
DRONE FORMATION CONTROL CENTER **White Sands Missile Range, New Mexico**

Proteus Corporation *1996 - 2008*
Coleman Research Corporation *1990 - 1996*
IBM Federal Systems Division *1985 – 1990*

- Provided senior Control and Systems Engineering oversight for three federal funded corporate contractors; designed, developed, tested, and documented software used in simulation, navigation, guidance, and control of target drones; utilized custom operating systems for batch processing and real-time operations on scalable supercomputers.

- Led project for integration and flight-testing of drone targets; supported development of ground control systems; developed novel terrain following, artificial intelligence-based path finding, Kalman filters and motion detection algorithms.

- Developed mathematical models (Matlab) for aircraft control and navigation systems; supported DFCS operational missions including assessing mission requirements, defining required systems modifications, and evaluating system performance.

SYSTEMS ADVISOR ENGINEER **1980 - 1985**
IBM FSD / SATELLITE SURVEILLANCE SYSTEMS **Westlake, California**

- Managed project concerning multistage processing of infrared satellite surveillance data; analyzed system requirements and software specifications; authored technical change proposals and system specifications.
- Conducted statistical and probability studies; assisted development of custom background data discrimination algorithms; simulated missile threat scenarios and evaluated system performance.

OTHER PROFESSIONAL EXPERIENCE

CONSULTANT **2007**
ENTERPRISE INFORMATION SYSTEMS **White Sands Missile Range, New Mexico**

- Provided consultation and served as member of the oral presentation team during bid of the TEAS Contract worth $200M+.

GS12-10 MATHEMATICIAN **1996**
U.S. ARMY REAL TIME CONTROL SYSTEM **White Sands Missile Range, New Mexico**

- Designed, implemented, and tested real-time software for accurate and reliable displays and data products for various range missions; analyzed real-time processing requirements and applied appropriate mathematical analysis and modeling techniques.

COLLEGE INSTRUCTOR **1993 - 2000**
DOÑA ANA COMMUNITY COLLEGE **White Sands Missile Range, New Mexico**

- Provided instruction on algebra, analytic geometry, and calculus I, II and III to students at branch campus.

EDUCATION

University of Texas at El Paso, El Paso, Texas
Master of Science in Electrical Engineering
Bachelor of Science in Electrical Engineering, High Honors

PROFESSIONAL TRAINING AND CERTIFICATIONS

- 6-Sigma Certified Specialist, (2016), Python #1 and #2, (2017), Raytheon, Tucson, AZ
- Digital Flight Control Systems (2007), Conceptual Design of UAV Systems (2004), Aircraft Dynamics and Flight Control Systems (1995), Kansas University, KA
- Advanced C++ (2002), Visual Basic (2002), Networking - Transmission Control protocol /Internet Protocol (TCP/IP) (2002), El Paso Community College, TX
- GPS Fundamentals and Applications (1998), GPS Analysis and Simulation (1998), NAVTECH GPS Alexandria, VA
- IBM System Engineering Principle and Practices (1981), Gettysburg, MD
- IBM Software Workshop, UNIX and C, (1981), Denver, CO
- Security A+ Certification (2010-2013), WSMR, NM
- MATLAB hands on experience (1985-present), WSMR NM.
- Simulink hands on experience (2004-2010) WSMR, NM
- Red-Hat Linux hands-on experience (2015-2021), Raytheon, Az

PUBLICATIONS

- An Adaptive Flight Control System for the QF-106 Drone Aircraft, UTEP Thesis, 1990
- A Real Time Path Planner for a UAV, AIAA 2007