

John B. Schlaerth III, M.S.

FPGA, Electronics, & Systems Engineer | M.S. Robotics/Controls
3+ yrs aerospace/defense engineering. Active U.S. Secret Clearance.
VHDL RTL design/verification, Xilinx FPGA implementation, SATCOM payload
Electrical interfaces, embedded systems, hardware V&V, & edge AI.

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WORK EXPERIENCE

- Lead Project/Component Engineer, LDACS IRAD Program – L3Harris Propulsion Systems** Los Angeles, CA: 2/26 - Present
- Led Combustion Devices IPT, driving requirements, hotfire/electronic valve test planning, supplier mgmt., & subsystem integration
- Lead Software/Hardware Engineer, Agentic AI IRAD Initiatives – L3Harris LHX Accelerator** Melbourne, FL: 10/25 – Present (Concurrent)
- 4th place out of 73 competing teams, spearheading the Tactical Field Agent: An edge AI assistant, manpack radio platform MVP
 - Finalist for autonomous robot platform, defining system architecture, interfaces, & prototype integration with Polymath Robotics
- Member, Engineering Leadership Development Program (ELDP) – L3Harris CHQ** Melbourne, FL: 6/24 – 6/26 (Concurrent)
- Selected for accelerated rotational program focused on advanced defense systems, technical leadership, & AI integration
- Electrical Design Engineer, USAF Big Safari Program – L3Harris Space & Mission Systems** Greenville, TX: 6/25 – 2/26
- Designed electrical interfaces & wire harnesses for C-37/VC-25 SATCOM payload integration; led cross-functional OPs coordination
 - Created error-filtering Artificial Intelligence process flow adopted by program management for use in standard design operations
- FPGA Digital Design & Software Engineer, Black Side Digital Design – L3Harris Comm. Systems** Salt Lake City, UT: 6/24 – 6/25
- Designed & verified VHDL RTL for SDA DVB SATCOM FPGA TX/RX modules with self-checking testbenches & MicroBlaze integration
 - Performed synthesis, PAR, & validation via Xilinx Vivado; ran RTL simulation, & on-device FPGA hardware testing & verification
 - Conducted RAMS analysis on 200+ embedded components, evaluating reliability, safety, and failure modes for broadband radio ICs
 - Developed autonomous Python crawler bot, using AI to accelerate website migration: Eliminated 1,000+ hrs manual upgrade work
 - Wrote FPGA development course for L3Harris engineers covering RTL design, simulation, synthesis, implementation & build flow
- Lead Project/Product Engineer, Next Generation Interceptor – Aerojet Rocketdyne/L3Harris** Los Angeles, CA: 6/23 - 6/24
- Led 8-engineer team across systems, design, integration & test; owned technical, cost & schedule execution for attitude thrusters
 - Led 5-person trim testing & 3D printing tiger team, cutting lead time by 16 weeks; drove component CDR with ~30 stakeholders
 - Led data analysis of >200 PAC-3 MSE solid rocket X-ray scans, classifying 500+ void anomalies to support production risk analysis

LEADERSHIP, PROJECTS & RESEARCH

- Systems/Electronics Engineer, FB-V12/HM-V2 Robot Design Project – Columbia University** New York City, NY: 1/23-5/23
- Designed/built 2 unique walking robots, leveraging evolutionary optimization, 3D printing, & Python-coded control/test algorithms
- Software Engineer, Simulated Soft Robotics Project – Columbia University** New York City, NY: 8/22-12/22
- Coded advanced genetic optimization algorithms & simulators from scratch in C++ and Python, evolving walking robotic designs
- Team Lead, Atmospheric Doppler LIDAR Scanner (ADLS-V9) Project – NOAA** Boulder, CO: 8/21-5/22
- Spearheaded engineering team of 9 with \$50,000 budget to construct robust and ultra-high precision LIDAR scanner for NOAA
- Team Lead, Recreational Vehicle Engineering Redesign Project – University of Colorado** Boulder, CO: 1/22-5/22
- Directed team of 5 to develop mechanical recreational vehicle prototypes and systems for the elderly and disabled
- Design Engineer, Moving Highway Kinetic Sculpture Project – University of Colorado** Boulder, CO: 1/22-5/22
- Devised and manufactured a high-precision electromechanical kinetic sculpture engineering project with team of 7 ME students
- Team Lead, Air-Form Splint Biomedical Engineering Manufacturing Project – University of Colorado** Boulder, CO: 1/21-5/21
- Guided engineering team of 4 in developing emergency medical splint product, conducting testing and analysis on prototypes
- Design Engineer, Anti-Nuclear Blast Shelter Research and Design Project – University of Colorado** Boulder, CO: 1/21-5/21
- Designed and analyzed shelter system capable of extreme nuclear blast resistance, withstanding high yield blast from 1 km away
- Design Engineer, Reverse Engineering CAD Modeling Project – University of Colorado** Boulder, CO: 1/20-5/20
- Performed intricate reverse engineering on an industrial battery charging apparatus and created detailed 3D SolidWorks model
- Team Lead, Electronic Bike Lock Engineering Design Project – University of Colorado** Boulder, CO: 8/19-12/19
- Led team of 5 to develop a high-fidelity prototype of an electronic bike lock using Arduino, FDM 3D printing, and CNC milling

SKILLS & CERTIFICATIONS

- **Organization:** Secret Security Clearance, V&V, Specs, Test Planning, Project Mgmt., MS Project, Jira, CAM/EVMS, Customer Comms
- **Electrical:** State Machines, Xilinx SoCs, Siemens NX, Capital Logic/Harness XC, LTspice, KiCad, Arduino IDE, Etcher, SBC, Harness Ops
- **CompSci:** VHDL, Verilog, Vivado (Synthesis/PAR), QuestaSim, Python, C, C++, MATLAB, Linux, Git, Bash, Docker, JavaScript, SQL
- **Artificial Intelligence (AI):** DNN/CNNs, RL, Agents, PyTorch, TensorFlow, Machine Vision, Edge/Embedded AI, EA/GAs, Local LLMs
- **Manufacturing:** Soldering, G-code, Saws, Drills, Mill/Lathes, FDM/SLM Printing, EDM, Welding, Brazing, Laser Cutting, CNC, Casting
- **Software/CAD:** SolidWorks, Creo, Onshape, Blender, Altair, Photoshop, Fusion360, Autocad, Finite Element Analysis, GUI Design
- **Specialties:** Systems Integration, Design/Prototype, Rockets, Autonomous Systems, Robots, Embedded Electronics, Full-stack SWE

EDUCATION

- Columbia University, Master of Science in Mechanical Engineering** New York City, New York
Concentration in Robotics and Control Systems August 2022 - May 2023
- University of Colorado Boulder, Bachelor of Science in Mechanical Engineering** Boulder, Colorado
Concentration in Advanced Product Design and Entrepreneurship August 2018 - May 2022