

STERLING PEARSON

Oviedo, FL | 813-545-2305 | sterling.pearson@icloud.com | [linkedin.com/in/sterlingpearson](https://www.linkedin.com/in/sterlingpearson) | sterlingpearson.com | U.S. Citizen

EDUCATION

University of Central Florida | B.S. Aerospace Engineering | GPA: 3.5

Expected Dec. 2027

ENGINEERING EXPERIENCE

SpaceX | Starship Thermal Hardware Engineering Intern | Cape Canaveral, FL

Jan. 2026 - Aug. 2026

- Owned end-to-end design of an automated adhesive deposition cell, characterizing nozzle-limited flow and setting valve, purge, and flush cycling for constant bead volume; adopted at critical design review for a ~10x production-rate scale-up.
- Cut marking time per part by more than 80% with an automated laser part-marking and traceability cell, owning design and review coordination through vendor evaluation, NASA laser-safety review, and ANSI Z136.1 hazard-zone analysis.
- Released ~10 production thermal-protection assemblies in Siemens NX with model-based definition, and designed check-gauge tooling with stack-up analysis and GD&T per ASME Y14.5 to verify attachment location at final assembly.
- Ran a DOE on a two-stage, dual-line evaporator fluid skid comparing filter micron pairings on cost per 1,000 L; traced losses upstream and chose the pairing that cut element cost ~90% at a manufacturing readiness review.
- Developed non-contact bondline verification testing for tile qualification, authoring requirements and seeded-defect articles for X-ray, CT, and cryogenic soak campaigns, and ran cryogenic proof testing on T1 flight hardware.

Firehawk Aerospace | Propulsion Design Engineering Intern | Addison, TX

May 2025 - Aug. 2025

- Designed, built, and fired parachute bay assemblies on a 3,500 lbf N2O/ABS hybrid campaign, owning hardware, test plans in Epsilon3, the 5-Why failure investigation, and the report on a successful hot fire presented to the U.S. Army.
- Prototyped hybrid, solid, and back-bleed propulsion hardware in Creo Parametric 9 with GD&T, machining igniters and test fixtures for U.S. Army programs through successful hot fire and delivery.
- Designed a 50,000+ lbf horizontal thrust test stand in Creo with Ansys structural FEA and trade studies to a 3.0 ultimate factor of safety design basis, and helped build a water-flow test stand.
- Projected a 360% fuel grain capacity gain with one-time-use, vacuum-capable FDM tooling and Parker O-ring glands.

Space Resource Technologies | Manufacturing Engineering Intern | Orlando, FL

May 2024 - Aug. 2024

- Cut same-batch regolith simulant processing for NASA, Blue Origin, and SpaceX from 4 weeks to 6 hours with Lean Six Sigma after tracking cycle time, labor, faults, and downtime over hundreds of runs; validated and moved to production.

RESEARCH

Propulsion and Energy Research Laboratory, UCF | Undergraduate Researcher | Orlando, FL

Sep. 2024 - Dec. 2025

- Executed liquid pre-detonator hot-fire campaigns from 100 to 1,000 psi on a 6 in dual-mode rotating detonation engine, characterizing injector spray and verifying deflagration-to-detonation transition at the exit plane.
- Plumbed and instrumented the Swagelok high-pressure fluid system and DAQ hardware, proof and leak checked before each hot-fire series, automated solenoid timing in Python and Arduino, and reduced wave speed data in MATLAB.

ENGINEERING PROJECTS

Knights Experimental Rocketry, UCF | Three Propulsion Teams | Orlando, FL

Fall 2023 - Dec. 2025

- Designed the N2O/propane bi-propellant feed P&ID to a 500 N, 10 s design basis, with 850 psi relief, remote solenoid control, and PCTFE/PEEK seat trades screened against LOX/GOX oxygen-compatibility and cold-temperature data.
- Sized run tanks and pressurant lines in MATLAB; modeled injector spray in Ansys CFD for fluid-system requirements.
- Drafted the first Hall thruster feed P&IDs; owned the IREC hybrid fiberglass/phenolic ablative liner, presenting it at CDR and laying and curing it with the team through static fire.

LEADERSHIP

Jet and Aeronautics Society at UCF | Founder and President | Orlando, FL

Oct. 2023 - Jan. 2026

- Founded and grew a 500+ member engineering society with 6 officers and a 30-engineer technical core, running a ~\$1,000 dues-funded budget and earning Mitsubishi project funding and machine access.
- Brought in Blue Origin, AMD, and Northrop Grumman engineers for guidance; led the turbocharger jet engine design.

SKILLS

Design and Analysis: Siemens NX (Certified), Creo Parametric 9, SolidWorks, Teamcenter, Ansys FEA/CFD, GD&T (ASME Y14.5), stack-up analysis, MBD, P&IDs, DFM/DFA, FMEA

Test and Fluids: proof and leak testing, Swagelok high-pressure plumbing, cryogenic testing, NDE (CT/X-ray), DAQ, Epsilon3, MATLAB, Python, C, Arduino, Grafana

Manufacturing and Credentials: CNC/manual machining, additive/FDM, DOE, Lean Six Sigma White Belt, NAR Level 1