

JAMES DRAKE

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EDUCATION

Auburn University, Samuel Ginn College of Engineering
Bachelor of Science in Mechanical Engineering
GPA: 3.38 / 4.00

Auburn, AL
May 2028

PROFESSIONAL EXPERIENCE

LiquidPiston, Inc., Bloomfield, CT

Design Engineer Co-op

August 2026 - Present

- Design rotary-engine components and test hardware in SolidWorks, producing assemblies and ASME-standard drawings for manufacture and test.
- Support hand calculations, structural and thermal FEA, tolerance stack-ups, and GT-POWER / GT-SUITE modeling for engine systems.
- Prepare components for additive manufacturing, CNC machining, and fabrication; support fixtures, design reviews, and test-driven revisions.

National Center for Additive Manufacturing Excellence, Auburn, AL

Undergraduate Research Assistant, Metal Additive Manufacturing

February 2026 - August 2026

- Led a one-piece Scalmalloy actuator-bracket redesign, rebuilding geometry from interfaces and load cases and comparing designs in SolidWorks and ANSYS.
- Reduced mass from 4.42 to 4.14 lb while preserving FEA performance; added DFAM geometry, machining stock, a fixture, and a 5-axis CNC plan.
- Resolved argon/vacuum furnace leaks and lab-equipment faults and automated heat-treatment documentation to improve repeatability.

Continuum Motorworks, Auburn, AL

Founder / Product Design and Manufacturing

November 2025 - Present

- Reverse-engineer hard-to-find automotive and motorcycle components using 3D scanning, SolidWorks, physical measurements, and test-fit prototypes.
- Design and produce small-batch ASA and PETG products, including Civic interior trim, a DR-Z intake adapter, and instrument-mount components.
- Manage concept development, material selection, FDM manufacturing, inspection, packaging, customer feedback, and controlled design revisions.

Flatirons Subaru, Boulder, CO

Automotive Technician

December 2021 - May 2023

- Diagnosed mechanical and electrical vehicle faults using inspections, scan tools, DMMs, road tests, and factory service information.
- Performed brake, suspension, tire, driveline, and general repairs to torque specifications and quality standards in a high-volume shop.
- Built practical knowledge of vehicle systems, serviceability, reliability, and failure modes through production and performance-oriented work.

ENGINEERING PROJECTS

Thermocouple DAQ & Furnace Validation

Instrumentation / Data Logging

- Developed an independent thermocouple DAQ workflow to verify furnace-controller readings, investigate high-temperature signal noise and drift, and automate test documentation.

Motorcycle Carburetor-to-Airbox Adapter

Suzuki DR-Z400S / Continuum Motorworks

- Designed and FDM-produced an FCR39-to-stock-airbox adapter and velocity stack, iterating geometry, clearances, sealing, and installation from physical fit checks and customer feedback.

SKILLS

Software / Analysis: SolidWorks (CSWA), ANSYS Mechanical, nTop, GT-POWER / GT-SUITE, Fusion 360 CAM, MATLAB, Python, FEA, DFAM, GD&T, 3D scanning.

Manufacturing / Vehicle: 5-axis CNC planning, fixture/tooling design, metal AM, FDM, heat treatment, thermocouple DAQ, DMMs, scan tools, vacuum/argon systems, automotive diagnostics.