

KC Engineering, Inc.

Department of Defense contractor. Measuring difficult things in harsh environments: aerospace testing, geophysics, machine learning and controls

Core competencies

Aerospace testing

Subsonic, transonic, supersonic and water-tunnel campaigns: test plan, model and instrumentation, force/moment, pressure, PIV, PSP, DIC and schlieren measurements, data reduction and reporting. Cyber-physical (hardware-in-the-loop) test methods.

Machine learning, data pipelines and AI tools

Neural-network and reduced-order models built from test and sensor data (POD, DMD, LSTM/GRU). Instrument-to-model data pipelines and PyTorch/Streamlit applications, with export to LabVIEW real-time and FPGA targets.

Geophysics and field surveys

Joint inversion of magnetic, induced-polarization and soil geochemistry data; machine learning on synthetic geology; UAV magnetics, VLF, lidar and photogrammetry surveys; survey planning against cost and depth of investigation.

Controls and systems

System identification, adaptive, model-reference and model-based control, hybrid physics-plus-ML control, and active flow control, tested on real-time hardware.

Past performance

U.S. Air Force: Department of Aeronautics, U.S. Air Force Academy; AFRL Directed Energy Directorate (Department of Defense)

Research for 18 years: subsonic and transonic wind-tunnel testing, active flow control, aeroelastic methods, dynamic stability (including the NASA Orion crew module) and aero-optics.

Hermeus

Multi-entry subsonic wind-tunnel campaign on a scaled model of a high-speed flight vehicle: test plan, model, instrumentation, testing and data processing (2024 to present).

Atargis Energy

Wave-prediction software (PyTorch, Streamlit) for a wave-energy converter control loop, and hydrodynamic work on a cycloidal wave-energy converter.

Scout Discoveries

Geophysical modeling and survey design for a copper exploration project in Idaho: multi-sensor models, synthetic-geology testing, drone and ground survey planning, and a data pipeline for new survey data.

Differentiators

- The principal, Casey Fagley, Ph.D., leads and does the work on every engagement.
- One focus: measuring difficult things in harsh environments, from high-speed flight to ocean waves to rugged terrain.
- 81 publications with authors and DOIs, including 20 journal articles.
- Test or survey design, data pipeline, model and software come from one team, so results reach decision makers quickly.

Company data

Legal name	KC Engineering, Inc.
Entity	Colorado C-corporation
NAICS	541330 Engineering Services
SAM	Active registration
Location	Colorado Springs, CO

Contact

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