

NIKO GRAPSAS

SELECTED WORK AND IMPACT PORTFOLIO

Evidence of scientific, entrepreneurial, research-system, autonomy, and institutional construction

Exploration Geophysicist and Scientific Entrepreneur

Founder, Sustainable Exploration

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nikograpsas.com | [LinkedIn](#) | sustainableexploration.earth

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Portfolio Logic

Challenge - role - action - result - evidence - maturity.

The portfolio does not treat every artifact as equivalent. Peer-reviewed science, completed operating work, self-directed research, and developing institutional practice are separated by work context and evidence status.

Evidence tier	Meaning
Externally verified	Independent publication, institution, degree, or completed external engagement.
Completed operating	Paid organizational responsibility and demonstrated commercial or institutional outcome.
Current developed	Substantial current work with internal demonstration and bounded external testing.
Candidate / open	Formal, empirical, adoption, reliance, or capability obligations remain unresolved.

Collective pattern: Grapsas builds the scientific, organizational, formal, and institutional structures that make complex work cumulative, inspectable, and actionable without overstating what the evidence supports.

03

Geophysical Research

Acoustic evidence of fluid-interface displacement in drying porous media.

Field	Record
Challenge	Characterize pore-scale fluid-interface displacement during drying using indirect, non-destructive measurement.
Role	Undergraduate researcher; first author; on-site science-operations lead during two DOE beam times.
Action	Designed experimental protocols combining acoustic emission, imaging, mass measurement, porous-media variation, and X-ray tomography.
Result	Established relationships among acoustic events, evaporative loss, grain size and irregularity, and fluid-interface displacement.
Evidence	Peer-reviewed article in International Journal of Multiphase Flow, volume 62, pages 30-36, 2014.
Capability demonstrated	Experimental design, indirect sensing, physical interpretation, continuous operations, uncertainty management, and scientific communication.

[Publication DOI](#)

04

Inpleo, Inc.

Building an enterprise AI and analytics company.

Field	Record
Challenge	Build and scale enterprise AI and analytics products whose outputs could be understood and used by senior institutional stakeholders.
Role	Co-Founder, Chief of Strategy & Co-CEO, 2018-2024.
Action	Led growth strategy, cross-functional teams, special projects, SaaS analytics, governance, and C-level client programs; helped develop Explainable AI and Deep Reinforcement Learning offerings.
Result	Company grew from pre-revenue to multi-million-dollar revenue scale; served Fortune 500 client class; launched or oversaw Alo Index, Trained, and VetRecor.
Evidence	Completed operating record; company, role, scale, client class, and venture outcomes are approved public claims.
Capability demonstrated	Company building, enterprise strategy, commercial execution, organizational design, executive communication, and bounded reliance on analytics.

05

Exploration Systems

Turning a diffuse interdisciplinary problem into a controlled research program.

Field	Record
Challenge	Existing disciplines analyze observation, engineering, risk, autonomy, or governance, but the coupling between evidence-generating action and future exploration can remain fragmented.
Role	Research lead and program steward; self-directed research and architecture development.
Action	Defined the Exploration Systems scientific object, questions, constructs, methods, lunar Reference System, comparative architecture, formal corpus, and adversarial review system; developed Evidence-State Sufficiency and the governed-autonomy branch, From Perception to Permission.
Result	A coherent research architecture now connects evidence, disturbance, architecture, dependency, optionality, authority, commitment, and bounded autonomous action while preserving counterexamples and open obligations.
Evidence	Research Program Profile; remediated structural corpus; Evidence-State Sufficiency work; From Perception to Permission research canon; GEAE specifications; SRR presentation and autonomy collaboration materials.
Maturity	Current developed research. From Perception to Permission is research-ready but not operationally validated, field- or flight-qualified, certified, or suitable for autonomous reliance.

06

Sustainable Exploration

Translating research into bounded institutional work.

Field	Record
Challenge	Projects and institutions can begin creating dependency before the physical evidence supporting a difficult-to-reverse commitment is explicit, sufficient, or defensible.
Role	Founder; institutional architecture, decision stewardship, and method development.
Action	Developed a bounded commitment-governance architecture spanning exposure review, minimum-evidence analysis, pre-commitment admissibility, governance posture, commitment integrity, precedent control, and reliance-specific reporting; aligned applications to subsurface, marine, and planetary exploration.
Representative output	A decision record that locates commitment exposure, separates evidence from assumption, identifies decision-dominant uncertainty, tests the next admissible step, and preserves conditions for deferral, refusal, constraint, or re-evaluation.
Evidence	Developed instrument and template architecture; controlled domain doctrine; representative cases in lunar exploration, geothermal, critical minerals, geological storage, marine, and related systems.
Maturity	Current institution and developing applied translation. External relied-upon use, repeat engagements, inter-rater evidence, and outcome evidence remain developing.

Institutional boundary

Sustainable Exploration supports evidence governance and decision stewardship. Formal Decision Authority remains with the responsible actor unless explicitly delegated; the work does not replace engineering, legal, financial, permitting, safety, or operational responsibility.

07

Governed Autonomy & Technical Development

A current research extension with a validation path and bounded maturity claims.

Area	Development and evidence
From Perception to Permission / GEAE	Flagship governed-geophysical-autonomy program and nested authority kernel for converting incomplete, non-unique evidence into bounded, revocable permission for the next exploration action.
Historical replay & validation	Proposed GEAE workbench preserves plausible interpretations, identifies decision-dominant uncertainty, ranks bounded measurements, issues/revokes Exploration Action Permits, and compares against fixed-plan, information-gain, and human baselines.
Geospatial, computation & remote operations	Colorado School of Mines GIS certificate; ArcGIS Pro, QGIS, remote sensing, terrain analysis, Python scientific modeling, and FAA Part 107 remote operations.
Field capability	Marine and technical-diving development supports future field analog work; it remains developmental and is not presented as completed operational authority.
Near-term evidence objective	Convert the governed-autonomy and exploration-systems architecture into externally reviewed replay, simulation, field-analog, computational, and publication-grade evidence.

Portfolio conclusion

The completed record is strongest in published experimental science and entrepreneurial execution. The current record is strongest in Exploration Systems architecture, governed-autonomy research, and institution formation. The next credibility frontier is external empirical, scholarly, field, and relied-upon evidence.

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