

# Script Reference Manual

All Standalone Scripts — Embedding Landscape Explorer

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This manual documents every standalone script in the project. Scripts are grouped by function: vocabulary generation, data pipeline, discovery tools, export tools, and utilities. All scripts are in the `scripts/` directory unless noted otherwise. Run from the project root.

**Convention:** Windows: `py scripts\name.py`. Mac/Linux: `python scripts/name.py`. All scripts accept `--help` where `argparse` is used.

**Note:** The complete script reference with full CLI syntax for all 25+ scripts has already been generated as a standalone document (`script_reference_manual.docx`). This placeholder confirms its place in the document suite. The full content document should be reformatted with the common header/footer treatment and renumbered as Document 5.

# Script Summary

## Vocabulary Generation (9 + 1 scripts)

Script	Domain	Output
generate_phrases.py	Science / Technology	phrases.json
generate_phrases_poetic.py	Poetic / Architectural	phrases_poetic.json
generate_phrases_materials.py	Materials / Making	phrases_materials.json
generate_phrases_ai.py	Artificial Intelligence	phrases_ai.json
generate_phrases_neuro.py	Neuroscience	phrases_neuro.json
generate_phrases_cs.py	Computer Science	phrases_cs.json
generate_phrases_art.py	Art / Practice	phrases_art.json
generate_phrases_military.py	Military / Strategic	phrases_military.json
download_glove.py	(prerequisite)	glove.6B.300d.txt

## Data Pipeline (13 scripts)

Script	Function
tag_phrases_science.py	Tag science domain labels
merge_domains.py	Nine-way merge with Shared detection
build_embeddings_merged.py	GloVe PCA-256 embedding vectors
build_map.py	UMAP 3D projection (seed: 21)
compute_density.py	KDE density field
compute_gradients.py	Density gradient vectors
compute_attractors.py	Gradient ascent attractor identification
detect_deserts.py	Desert region classification
compute_desert_field.py	Dense 96×96 desert distance field
compute_layer_field.py	Per-layer density fields
compute_voronoi.py	Voronoi tessellation and vertices
build_render_data.py	Frontend rendering data assembly
compute_basins.py	Basin topology and boundaries
generate_concepts.py	Concept candidates and metadata

## Discovery & Export Tools

Script	Function
generate_contexts.py	Contextual variant embeddings (real or synthetic)
batch_discover.py	Automated dig site discovery with LLM descriptions
batch_cross_discover.py	Cross-domain probing at percentile distances

find_dig_sites.py	Desert region enumeration
export_topo.py	Fabrication diagram export (PDF/PNG/CSV)

## Launchers & Configuration

Script	Function
run_pipeline.ps1	Full 22-step pipeline (-Downstream to skip vocab)
start.sh / start.ps1	Quick-start (backend + frontend + browser)
terrain_config.py	UMAP seed (21) and stability constants