DeFi Milestone Plan (Condensed to 5)

This document condenses the NGF 12-step process into 5 parsable milestones for DeFi, aligned with the Warp → Detect → Denoise doctrine described in the patents and article. Each milestone is script-driven (e.g., defi_milestoneX.py), validated, then folded into the micro_llm package with benchmarks and tests.

Milestone 0 — Baseline (■ done)

- Adapters: simple rule + stub mapper (ARC + DeFi).
- Residual traces + priors.
- Stage-10 rails (matched filter + dual thresholds).
- Basic verifiers (ARC grid ops, DeFi invariants).
- End-to-end CLI runs working.

■ This is where we already are.

Milestone 1 — Hybrid Mapper + Prior Injection

- Integrate trained mapper (scikit-learn joblib stub).
- Confidence scoring + abstain wiring.
- Adapter residuals boosted with priors.
- Stage-10 rails respect priors when ordering.

■ Produces a stronger front-end mapping from prompt → features → traces.

Milestone 2 — Stage-11 Warp + Detect

- Warp: funnel fit, PCA(3), curvature metrics.
- Detect: matched filtering with calibrated nulls (permutation / circular shifts).
- Output: stable well identification + ordered primitives.

■ First NGF-native reasoning path, still without denoiser.

Milestone 3 — Stage-11 Denoise + Safety Guards

- Hybrid EMA+median smoothing.
- Confidence gates + noise floor rejection.
- Phantom-guard probes.
- Monte Carlo jitter averaging.
- Logging: SNR, phantom index, hallucination/omission rates.

■ Yields deterministic suppression of phantom wells.

Milestone 4 — Consolidation + Benchmarks

- Fold into micro_llm package.
- ARC + DeFi benchmark suites (latent ARC, toy DeFi scenarios).
- Test harness for hallucination/abstain metrics.
- Push to GitHub, tag release.

■ Demonstrates end-to-end deterministic micro-LLM reasoning.

Milestone Checklist

Milestone	Status
0 — Baseline	■ done
1 — Hybrid Mapper + Prior Injection	■ pending
2 — Stage-11 Warp + Detect	■ pending
3 — Stage-11 Denoise + Safety Guards	■ pending
4 — Consolidation + Benchmarks	■ pending