

RECURSIVELY OPTIMIZING AI SWARMS FOR PRECISION TARGET DISCOVERY: A PERSISTENT-MEMORY APPROACH TO NEURODEGENERATION

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**KEY
TAKEAWAY**

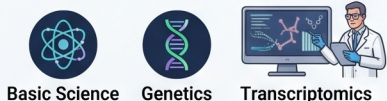
A SELF-EVOLVING MULTI-AGENT SYSTEM WITH PERSISTENT MEMORY
AUTONOMOUSLY DISCOVER NOVEL AD TARGETS FOR COGNITIVE RESILIENCE.

OVERCOMES LIMITATIONS OF STATIC AI IN COMPLEX OMICS VIA RECURSIVE LEARNING.

INTRODUCTION

ALZHEIMER'S DISEASE RESEARCH CHALLENGE

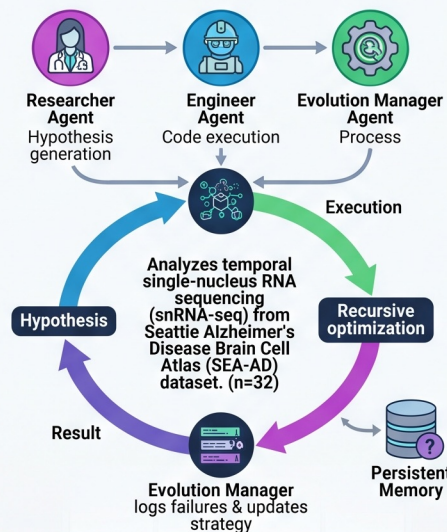
Massive volumes of multi-scale
single-cell transcriptomic data.
Traditional manual analysis lags.
Existing static analysis pipelines:
Lack targeted parameters, fail to
learn from historical analytical
failures.



- L01 Describe how a persistent-memory multi-agent framework continuously evolves its analytical strategy.
- L02 Identify cognitive-resilience-associated transcriptomic parameters that static AI pipelines overlook.
- L03 Distinguish the performance of self-evolving multi-agent systems from static AI baselines in biological novelty.
- L04 Assess the statistical feasibility of AD target discovery with multi-agent systems.
- L05 Define the role of persistent memory in multi-agent bioinformatics pipelines for neurodegeneration.

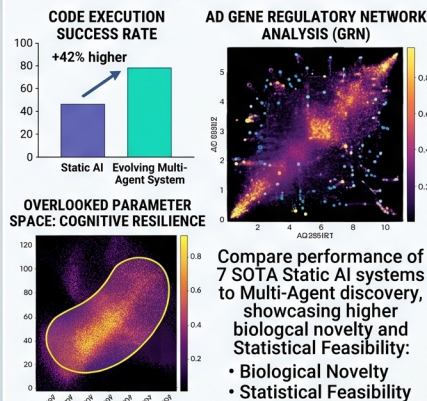
METHODS

SELF-EVOLVING MULTI-AGENT FRAMEWORK



RESULTS

PERFORMANCE & NOVEL DISCOVERY



CONCLUSIONS

RECURRING MEMORY PARADIGM

- Self-evolving multi-agent architecture with persistent memory overcomes static AI limitations in complex complex omics.
- Persistent memory enables autonomous discovery of high-value cellular targets.
- Accelerates data-driven biological research in Alzheimer's disease.